The Political Economy and Institutional Foundations of Inequality, Social Mobility and Education Disparities: Essays from the Developing South

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Declaration

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Abstract

This doctoral dissertation seeks to understand key underlying institutions (formal and informal) that reproduce inequality and social rigidity in Chile, mainly focusing on vicious dynamics taking place in the realm of education (school and tertiary level).

Education is a key institution in society, playing a fundamental role in the reproduction of inequality through the selection of leaders (generally from privileged social backgrounds) and also via the socialisation of new generations – perpetuating worldviews, ideologies and social norms. However, it may also play a crucial role in the transformation of prevailing institutions through technical knowledge, political deliberation and/or cultural change, and thus in creating new development pathways for society.

In order to analyse the role of formal and informal institutions in the perpetuation of inequality and social rigidity, taking education as a critical case study, this dissertation develops four essays from a political economy and institutional analysis approach. The first essay sets the scene by analysing the political economy of inequality in Chile from an historical perspective. The second essay investigates the political economy of the Chilean school system and its role in the reproduction of inequality. The third paper highlights the importance of informal institutions, and their role in shaping individuals' preferences. The fourth and final paper analyses the joint effect of social class and institutional horizontal differentiation of the tertiary education system on intergenerational social mobility and labour market trajectories of graduates.

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Preface

Chile has frequently been considered a development success story within the Latin American region for its consolidated democracy, social stability and sustained economic growth. Indeed, in recent years it has been recognised by the international community. In 2012, the World Bank classified Chile as a 'high income' country for the first time, just after becoming the first South American country to join the OECD in 2010. Despite these achievements, Chile seems to manifest an important paradox, common to many developing countries. Behind its general façade of progress and prosperity, it hides a complex reality characterised by profound social injustices – and these persistent inequalities have not come about by chance. Their deep structural causes are rooted in unfair political, economic and social institutions, which have been shaped throughout history by asymmetric power relations.

From this perspective, this doctoral dissertation seeks to understand key underlying institutions (formal and informal) that reproduce inequality and social rigidity in Chile, mainly focusing on vicious dynamics taking place in the realm of education (school and tertiary level). Education is a key institution in society, playing a fundamental role in the reproduction of inequality through the selection of leaders (generally from privileged social backgrounds) and also via the socialisation of new generations – perpetuating worldviews, ideologies and social norms. However, it may also play a crucial role in the transformation of prevailing institutions through technical knowledge, political deliberation and/or cultural change, and thus in creating new development pathways for society.

In order to analyse the role of formal and informal institutions in the perpetuation of inequality and social rigidity, taking education as a critical case study, this dissertation develops four essays from the perspective of political economy and institutional analysis.

The first essay sets the scene by analysing the political economy of inequality in Chile from an historical perspective, highlighting the need to use a holistic institutional approach in order to unravel persistent structural inequalities. This essay applies such an approach to examine the power of elites to shape formal rules to their advantage, studying the income distribution of the top 1% and the key characteristics of the Chilean tax system. This institution is chosen both for its

centrality and significance to the distributive class struggle of a society, and because of its fundamental role in sustaining the expansion and quality of social services, such as education. The analysis shows that, among those countries for which comparable data are available, Chile's income concentration at the top 1% is the highest in the world. Importantly, the data presented in this paper show that this level of concentration is higher than in the OECD countries when the latter had the same level of economic development as Chile today. This paper argues that the levels of inequality in Chile cannot be fully explained by market forces, as the neoclassical approach would suggest, nor by Chile's level of economic development; instead, the analysis suggests the existence of an 'institutional lag' (exemplified by the current tax system), sustained by asymmetries of power. The study concludes that an institutional approach to analysing inequality is more adequate than alternative neoclassical theories.

The second essay investigates the political economy of the Chilean school system and its role in the reproduction of inequality. Moreover, in the context of the increasing role of private education around the world, this paper is an important contribution since Chile constitutes one of the oldest and most extensive voucher systems in the world, and thus represents a valuable experience from which numerous general lessons may be drawn. It theoretically and empirically examines the effects of neoliberal policy reforms on education quality and equity, studying a key pillar of education markets: the role of competition between schools as a driver for education quality improvement. From a theoretical point of view, this paper advances the understanding of education markets as formal institutions which have an important effect both on the overall learning outcomes and their distribution among different segments of society. Empirically[1], it articulates and analyses several administrative datasets, comprising the more than 10,000 private and public schools in the education system, to estimate econometrically the effect of competition among schools on learning outcomes of students, measured through national standardised test scores. This paper shows that competition has a negligible and negative effect on test scores throughout the country, thus suggesting that education markets should not be considered as an adequate 'set of rules' to promote school improvement. The paper then offers an explanation of these findings, analysing each one of the main underlying assumptions of the voucher model in education,

[1] The methodological strategy and conceptual discussion of the empirical section is partly based on González (2004), which was presented as my master´s dissertation at PUC. This new section however draws on broader evidence, and a new and larger dataset to better address the objective of this chapter.

demonstrating through empirical evidence why they do not work in reality. Finally, it discusses the main policy implications.

The third paper highlights the importance of informal institutions, and their role in shaping individuals' preferences. It provides empirical evidence on the effect of social classes on the perceptions of reality, demonstrating that inequality affects the chances of poorer youths to transition successfully into higher education. This paper explores mechanisms by which inequality detrimentally affects education attainment and thus social mobility, estimating and examining *ex-ante perceived* rates of return to higher education among students from different socio-economic status (SES) in Chile. In order to complete this research, an especially designed questionnaire and face-to-face survey was carried out among more than 500 Chilean secondary students from low, middle and high SES[2]. The analysis of the resulting data provides new evidence showing that, at the aggregate level, students' estimated *perceived* rate of return corresponds accurately with the *actual* national mean (based on actual labour market data), as predicted by the Human Capital Theory (HCT). However, when data are analysed at the individual level, large deviations from the mean are detected. Specifically, we find that low SES students report much lower perceived returns than their high SES peers, questioning the validity of the HCT, as a pertinent policy framework in highly unequal societies. Taking into account the current university student loan system's interest rates, it could be rational for a considerable proportion of low and middle SES students to refuse to enrol in higher education, hindering their chances of social mobility. Underlying causes of these differences are explored, and policy implications discussed.

The fourth and final paper analyses the joint effect of social class and institutional horizontal differentiation of the tertiary education system on intergenerational social mobility and labour market trajectories of graduates. For this purpose, it develops and applies a unique questionnaire and face-to-face survey to more than 1,850 graduates after a decade since their labour market insertion. This ambitious and complex data collection process took 2 years to be successfully completed, and entailed more than 30 part-time pollsters. To the best of our knowledge, the resulting dataset is the most complete and detailed source of its kind currently available in Latin

[2] This research was partly funded by the University of Cambridge. This paper is a revised, expanded and new version of the research presented for my MPhil in Development Studies dissertation at the University of Cambridge (2010-2011).

America[3]. The statistical and econometric analysis of this novel and robust data shows the existence of divergent labour market trajectories among professionals, who – despite having graduated from the same university and study programme – have increasingly different wages, job qualities, and hierarchical positions within the organisation for which they work, depending on their social background. In other words, the great equalising promise of higher education is only partly fulfilled in the Chilean case.

[3] In order to carry out this study the author received the generous donations of Pontificia Universidad Católica de Chile, Universidad Diego Portales and INACAP. Additionally, parts of the costs were covered through a contract between the author and the World Bank, in return for a publication in this critical matter for the region. This study was designed and led by the author, with research assistance (collaboration) for fieldwork coordination and parts of the statistical analysis sections.

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Introduction

'Education does not transform the world.
Education changes people. People change the world.'
Paulo Freire

Development and inequality: a life-long research project

Due to my father's job, I had an itinerant childhood, living in many countries and cities in the developing and developed world. At the time, some of those countries were middle- to low-income countries, such as Peru and Lebanon; middle- to upper-income, such as Argentina, Brazil, and Chile; and high-income, such as the United States and Spain. One of the things that most struck me as a child and adolescent were the enormous differences between countries, in terms of dimensions such as wealth, poverty, inequality, social discrimination and violence. These disparities between countries, and indeed the divisions within their societies, were palpable; yet the underlying causes or explanations given by my parents and teachers always seemed insufficient and unconvincing, even from a school boy's perspective.

Moreover, it was confusing as a child to experience the degrees of discrimination that I was subject to: in some cases, I was categorised as hailing from a somehow 'inferior' background – as a result of being a Latin American boy living in the USA; in other cases, categorised as part of the 'elite', simply because I had a lighter skin colour than my Peruvian school peers. The exact same person housed two different – even opposite – identities, depending on the existing social norms and hierarchies in each locality. This experience likely explains my initial interest in history, economics and development studies from an early age – even if I did not identify them using that terminology.

After graduating from university, I spent a decade working for the Government – at the Ministries of Education and Finance – designing and implementing policies and reforms in the fields of education, innovation, and taxation. During that time, I had the chance to observe how institutional

change occurred, noticing that it was driven more by political concerns and conflicts than by ethical principles, conceptual models, and/or efficiency concerns. This period was key to better understand from within a government administration the kind of debates, analysis, and choices made by high-level authorities and political leaders when encountered to critical junctures. Yet this prompted more questions than answers, both practical and theoretical: what is development as such, and how can it be achieved? why are we so unequal, and what would a fair society look like? what is the role of formal institutions and social norms in generating and sustaining virtuous egalitarian development paths? can education be a real solution to foster equality, freedom and development, or is it just a malevolent system designed to maintain and reproduce asymmetries of power?

Of course, answering these fundamental questions exceeds the scope of this dissertation. Nevertheless, these lines of enquiry have fuelled and inspired my work every day during my stay at Cambridge and beyond. This doctoral dissertation has provided me the chance to question, research, reflect, learn and answer (at least partially) some of these important questions. I hope this work offers some insights and inspires further interrogation by those walking the similar paths.

Before introducing the dissertation any further, it seems necessary to present the lenses through which development, inequality, institutions and education are analysed. Although the objective is not to develop an in-depth theoretical discussion at this stage – as each chapter has its own conceptual section – I believe it is relevant to lay the groundwork, in terms of the basic relations between these concepts.

In summary, this section briefly argues that development may be conceptualised as freedom. – though noting that freedom should not be conceived from an individualistic perspective, as its relational dimension should be recognised. Moreover, liberty can only exist under considerable degrees of equality. In turn, in order to promote and sustain an egalitarian society, formal and informal institutions are critical. However, not any institutional arrangement will suffice – only those founded upon principles of justice. Among the array of key institutions that foster economic development, democracy and social justice, the education system is determinant: not only it has a direct impact on the levels of inequality, social mobility and economic development, it also

indirectly affects social and political participation, emancipating its citizens to analyse the prevailing institutions critically in order to re-imagine and build a new society.

Development: equality as a requirement of freedom.

Amartya Sen (1999) argues that development should be conceptualised as freedom. In other words, development entails expanding the capabilities of individuals within a given society, providing them with a real chance of achieving the beings and doings that they have reason to value. This definition could easily be misinterpreted as a libertarian appeal to embrace individual freedom as the sole core value of a developed society (Hayek, 1944; Nozick, 1974). In fact, such a distorted approach, which overemphasised freedom as an exclusive guiding principle for development (Friedman, 1980), inspired the reforms promoted by many conservative and liberal political leaders in the developed and developing world – especially since the 1980s.

Nevertheless, it is important to recall that even liberal thinkers, such as Isaiah Berlin (1958), remind us that individual liberty is not, nor needs to be, the only – or even the most important – principle upon which societies should be built on. In that sense, Berlin recognised the social dimension of freedom, rejecting a purely individualistic approach, arguing that 'the blood-stained story of economic individualism and unrestrained capitalist competition' is undesirable, since 'freedom for the wolves has often meant death to the sheep' (Berlin, 2002:38).

Furthermore, Zygmunt Bauman (1988) argues that freedom is always relational. In fact, Richard H. Tawney (1931) points out that equality among individuals is a necessary condition for liberty. According to the latter, freedom is a continuum not a specific 'state', and it may be defined in terms of the relative powers that different social classes, groups, or members of society enjoy.[4] In Tawney's view, for the weak to enjoy freedom, one must restrain and limit the strong men's powers. Therefore, equality (or at least high degrees of it) is an essential requirement for the existence of effective freedom. In Tawney's words 'liberty is equality in action' (Tawney, 1931:168).

[4] 'Freedom is always, no doubt, a matter of degree' (Tawney, 1931:166).

Institutions: sustaining freedom and equality

When the very concept of liberty is further scrutinised, the need for institutions that guarantee the enjoyment of liberty by each member of society clearly arises. In fact, Berlin (2002) distinguishes between negative liberty (the freedom from external interference) and positive liberty (the freedom to do and lead a certain form of life), arguing that the latter cannot be achieved without the existence of proper institutions.[5] Social services such as education are essential in this context. In his own words:

> *Legal liberties are compatible with extremes of exploitation, brutality and injustice. The case for intervention, by the State or other effective agencies, to secure conditions for both positive, and at least a minimum degree of negative, liberty for individuals, is overwhelmingly strong.*
>
> (Berlin, 2002:38)

But what are institutions as such, and why are they so important for sustaining freedom and equality? Karl Polanyi (1944:262) views institutions as 'embodiments of human meaning and purpose' that comprise the political, economic, cultural and social spheres of a community. Douglas North (1990:3) argues that institutions, understood as 'the rules of the game in a society', play a critical role in shaping development paths. In fact, these institutions, both formal (laws and regulations) and informal (social norms), not only restrict or enable human behaviour and interactions (North, 1990), and mould individuals' preferences and identities (Akerloff and Kranton, 2010), they also have an important effect on the distribution of social outcomes and property rights (Knight, 1992).

In sum, prevailing institutions affect economic development and also determine the degrees of inequality, i.e. those who benefit from it (Knight, 1992). Indeed, Acemoglu and Robinson (2012:84) also argue that 'different institutions have different consequences for the prosperity of a nation, how that prosperity is distributed, and who has power.' Based on this observation and historical development paths, these authors suggest the existence of two types of institutions,

[5] While negative liberty describes the possibility of carrying out a certain course of action without intervention, positive liberty provides the capability of actually choosing that course of action.

differing on their long run effect on growth and distribution of resources: on the one hand, 'Inclusive Institutions' are those that promote the wide and fair participation of all members of society in contributing to the economy and the benefits resulting from it; on the other, 'Extractive Institutions' are mainly designed to obtain and transfer wealth from vulnerable groups to the dominant elites. Within this framework, it is possible to state that the underlying causes of the differences among individuals in a given society and between societies are found in its institutions.

Justice: the first virtue of institutions

Of course, not all types of institution are adequate for effectively promoting freedom and equality. In fact, despite the constant concern for efficiency in modern society, efficiency should not be the primary principle under which institutions are built upon and socially assessed. In fact, fairness and justice should be the key principles and virtues of any social institution. In John Rawls' (1971:3) own words:

> *´Justice is the first virtue of social institutions, as truth is of systems of thought. A theory however elegant and economical must be rejected or revised if it is untrue; likewise, laws and institutions no matter how efficient and well-arranged must be reformed or abolished if they are unjust.´*

Justice is indeed an essential requirement of society, if each person is to be treated as ends-in-themselves, entitled to inviolable dignity. According to Immanuel Kant (1921:46), one must 'act in such a way that you treat humanity, whether in your own person or in the person of another, always at the same time as an end and never simply as a means, and the dignity of the person lies hereby.' Utilitarianism is thus rejected, since 'each person possesses an inviolability founded on justice that even the welfare of society as a whole cannot override' (Rawls, 1971:3).

Under Rawls' theory of justice, fairness rests on two main principles, agreed under an original position of equality – or behind a veil of ignorance – entailing: (1) equal rights to the most extensive scheme of basic liberties, and (2) the greatest degree of social and economic equality, regulated under the principles of fair equality of opportunities and the difference principle.

Inequality and social rigidity: the unbearable manifestations of unfair institutions

These initial considerations from political philosophy are important because they allow us to establish a point of reference, increasing our clarity regarding the principles and lenses through which the state of society may be assessed. Nevertheless, beyond the significant substantive considerations that make addressing injustices an urgent matter, from an instrumental perspective it is evident that social gaps should be a priority for public policy. Inequality negatively impacts a country's economic development, democracy, social cohesion and social mobility (Berg and Ostry, 2011; Boix, 2003; Acemoglu and Robinson, 2006; Tironi, 2008; Corak, 2013).

If inequality has this devastating effect on society, those of us living in Latin America should be most concerned. In fact, this region is the most unequal on the planet (De Ferranti et al., 2004; Lustig, 2015). Disparities permeate the economic, political and social spheres and are rooted in institutional factors that are both structural and historically structured (González, 2019; UNDP, 2017).

In this context, Chile also represents an extreme case of inequality worldwide. Its income distribution ranks as the 18th most unequal among 154 countries for which comparable data is available (World Bank, 2017). In 2015, its Gini coefficient reached 0.48 (CEPAL, 2017). The Chilean elite at the top 1% of the distribution of income is capable of capturing 19% more income, in relative terms, than its peers in the United States and 252% more than those in Denmark (González, 2019).

This elevated level of income inequality is not a recent phenomenon, but one that has characterised Chilean society since its origins. Although historical data are scarce, recent research efforts have allowed estimating income Gini coefficients that extend as far as the second half of the 19th Century (Rodriguez, 2017). Indeed, despite medium-run variations (in some cases important ones, such as the egalitarian gains experienced between 1933 and 1973), income inequality has steadily fluctuated between 0.5 and 0.6 Gini coefficient points during the last 160 years.

Not only is the inequality of outcomes stark, but the inequality of opportunities as well. This should be expected as international evidence shows that countries with high levels of income inequality tend to have lower intergenerational income mobility (Corak, 2013). In the case of Chile, studies

examining the levels of social mobility in the country reveal a pattern of class mobility which is 'characterised by a strong barrier to mobility to and from the professional class at the top of the occupational structure but much higher fluidity between the middle and lower classes, a pattern consistent with high income concentration at the top' (Torche, 2014:629).

Comparative evidence sheds light on the process behind social mobility. In this process, the influence of the social class of origin acts through indirect and direct mechanisms (such as education and parental social networks in the labour market, respectively) that impact children's trajectories. Analyses of the intergenerational transmission of inequalities show that indirect mechanisms tend to be more important than direct ones. Studies have indeed determined that the intergenerational relationship is strongly mediated by education (Blau and Duncan, 1967): in other words, the parents' occupational status is strongly transmitted indirectly through the quantity, type and quality of education provided to their children. Descendants do not only benefit from the parents' economic capacity to acquire more and better educational services, but, as the theory of social reproduction suggests, they also benefit from the transfer of parents' cultural capital, which better allows them to take advantage of those opportunities (Bourdieu and Passeron, 1977; Bourdieu, 1978).

Education system: emancipation vs reproduction of inequality

The role and impact of education upon inequality and social mobility is an intensely debated one. In fact, there are two main views in this regard.

The first viewpoint emphasises the positive properties of education, both intrinsic (as a human right) and instrumental (as a key factor for individuals' success in the labour market and economic development of a country).

Indeed, education *is* a human right – one that recognises the value of human dignity, and has a potentially emancipatory capacity in its empowerment of citizens to critically question reality and the very social, economic and political institutions in which their existence is embedded. Ignorance limits the capability of individuals to choose and achieve valuable doings and beings. Moreover, ignorance limits the capacity to understand and act over the very institutions that restrict their lives and/or enact direct or symbolic violence over them. In this sense, as Paulo Freire argued, education

does not transform the world. It transforms the people that will transform the world. Although from an institutional approach, this idea could be probably rephrased as: 'Education does not transform the world. It transforms people that transform institutions, that in turn transform the world.' In other words, education plays a crucial role in the transformation of prevailing institutions through technical knowledge, political deliberation and/or cultural change, creating new development paths for society.

Moreover, education plays a positive instrumental role in development. In fact, Schultz (1961), Becker (1964) and Mincer (1974) argue that education constitutes an investment that enhances a person's 'Human Capital', increasing their productivity, wages and prospects in the labour market (Psacharopolous and Patrinos, 2004). Additionally, the New Growth Theories emphasise the importance of school and higher education systems – including R&D activities – as key drivers of economic development (Lucas, 1988; Romer, 1990). Education constitutes not only a key input for the generation of new ideas and development of new technologies within the country, but also an essential condition allowing technologically lagging countries to catch up faster (Barro, 1991).

On the other hand, the second perspective on education tends to highlight its negative role, as a mechanism for social reproduction of elites and their privileges, sustaining and prolonging prevailing inequality and social rigidity. It may do so through a selection process of the leaders that occupy the top social, economic and political positions in society. The problem arises when education systems are shaped in a way that these leaders are continually selected from a narrow pool of candidates from advantaged social groups.

Indeed, in principle, education systems should contribute to consolidate a fair and meritocratic society, where valuable positions in the social structure are accessed through educational credentials, supposedly attained as a result of individual effort and talent. Nevertheless, when in reality the attainment of these credentials depends not so much on merit, but on veiled ascribed privileges and socio-economic background (due to inequalities and exclusions built into the fabric of the education system), valuable positions are unfairly distributed among already elite members of society. This situation worsens when people fallaciously believe that the social system is actually based on meritocratic principles. In this case, educational credentials are mistaken for talent, effort and virtue. As a result, those members of society that do not achieve the desired

credentials and related positions blame themselves for the apparent individual failure (Bourdieu and Passeron, 1977; 2009).

Education may also have a negative effect perpetuating inequality, through the socialisation process of new generations, transmitting worldviews, ideologies and social norms that might discriminate against certain groups or legitimise social injustice and symbolic violence (Bourdieu and Passeron, 1977). In fact, socialisation entails both 'equipping the *selected* with the necessary attributes to occupy these (high) positions, and persuading the *rest* of society that the selection was fair…' (Brennan and Naidoo, 2008:288).

Some researchers argue that the reproductive role of education reaches a point at which the students from each social class would receive a different type of education based on a hidden differentiated curriculum (Bowles and Gintis, 1975). As a result, schools not only 'impart skills, but they also impart norms regarding who students should be and what they should become. These ideals affect how long students stay in school and also how much they learn while there' (Akerlof and Kranton, 2010:62).

In many cases, evidence shows that, as a result of this educational socialisation process, working-class students lower their academic and professional aspirations. This logic also applies to higher education systems. Colleges and universities, as organisations embodying and dictating rules and norms, determine both the type of student that should enrol and those who do not 'belong' (Akerlof and Kranton, 2010). In fact, Reay, David and Ball (2005) found in the UK that students from low socio-economic status (SES), whose peers and family have not undertaken tertiary education, tend to feel like 'strangers' in a world with different rules of behaviour and ideal identities from those prevalent in their own 'social category'.

This setback derives from the fact that prevailing norms and cultures in education systems are certainly not neutral. As Giddens (2009:847) argues:

> *The education system itself is not just a neutral field divorced from the wider society. Rather, the culture and standards within the education system reflect that society and, in doing so, schools systematically advantage those who have already acquired cultural capital in their family and through social networks in which it is embedded.*

In synthesising these elements, it becomes apparent that education has both positive and negative potential for development, and that these are constantly in tension. Its final impact depends on the actual design of the education system and the different forces that struggle to re-shape or perpetuate it.

Persistence of unfair arrangements: exploring drivers of institutional change

Having now briefly shed light over some essential questions regarding the concept of development, its relation to freedom and equality, and the critical role of institutions and education; it seems logical to ask: why is it that institutions, such as education, do not respond to basic principles of fairness? Moreover, why have extractive institutions tended to prevail and persist throughout time, especially in the developing world (Galeano, 2004)?

Although there is no single consensual theory of institutional emergence and change among researchers, most of them may be classified by three approaches: (1) utilitarian-functionalist, (2) cultural-sociological, and (3) power-distributional.

The utilitarian-functionalist approach explains the emergence and change of institutions in terms of their functionality and capacity to solve collective action problems (Thelen, 2003). Their relevance rests on their capacity to reduce uncertainty, transaction costs and promote exchange. As a result, the main driver for change is efficiency gains, i.e. maximisation of aggregate welfare.

The cultural-sociological approach perceives institutions as embodying shared cultural scripts and beliefs of how the world works (Thelen, 2003). As Scott and Meyer (1994:234) argue, institutions correspond to the `construction over time of a social definition of reality such that certain ways of action are taken for granted as the 'right' if not the only way to do things´. Despite its importance, the cultural-sociological approach seems to be more relevant to explanations of persistence rather than institutional change in the short- and medium-term.

The power-distributional approach (and the extensive historical evidence that supports it) shows that institutions emerge and change as a result of conflict, asymmetric power relations and imbalances between different social groups, each one struggling for their own benefits (Thelen, 2003). As Knight (1992: 20) puts it, 'institutional development is a contest among actors to establish rules which structure outcomes to those equilibria most favourable for them.'

In this context, economic and political elites not only have more power to shape institutions to their advantage, but also to obstruct critical reforms that promote equality and inclusive development. They achieve this goal by increasing the 'transitional costs' involved in the process of moving from one institutional arrangement to another (Khan, 1995).

In the quest for class domination and hegemony, academics also play an important role by supporting certain discourses that block or enable institutional and social change. As Michel Foucault (1980:131) argues, 'truth is not outside power… each society has its own regime of truth… there is a combat for the truth…' In this context, the academy and community of experts play a key role defining the rules under which theories and evidence are considered and accepted as truth. They constitute the gate-keepers of a hypothetical 'truth', but are not independent of relations of power in society; on the contrary, they respond and cooperate, and are even co-opted by those in power.

In modern society, power is displayed through networks of communication which enable individuals to communicate directly among themselves without intermediation; this in turn gives rise to the creation and appropriation of new social and cultural meanings (Castells, 2012). This is no doubt why social media has become so important in the last decade, since it allows people not only to connect and establish bi-directional communication among equals – as opposed to traditional media, which only provided a uni-directional flux of information dictated by a centralised actor, such as a newspaper or TV news broadcasting.

The Chilean case: persistent inequalities and a dysfunctional education system by design

In order to discuss the underlying role of institutions on inequality and social mobility, this dissertation has chosen to focus primarily on an analysis of the education system. As a consequence, it has also chosen Chile as a case study due to its unique education system, based on neoliberal ideals that have fuelled and legitimised the prevailing injustices in society.

Indeed, Chile is a complex yet unique case study, which combines political stability and moderate (albeit consistent) economic growth in the last three decades, with exceptionally high levels of inequality. Although the roots of inequality may be traced to the colonial period and even to the independence of the republic in the 19th Century, in the 1980s Chile was subject to a dramatic

institutional change under the dictatorship of Pinochet and the neoliberal ideas imposed by those economists known as the 'Chicago Boys'. During that period, the state was dismantled and its role diminished and weakened; public social expenditure reduced, and social movements and unions crushed. In sum, every sphere of economic and social life was opened to the realm of unfettered free markets.

The education system was no exception. The school and the tertiary systems were condemned to function as any other market, being denied as a human right. Its provision was largely transferred to for-profit private providers, which competed in de-regulated markets. Its access and quality became subject to the economic capacity of each family, since public expenditure was reduced. As a result, the unique political economy of the school and higher education system, transformed it into a perfect mirror of social gaps and hierarchies observed in society. Under this institutional design it could only reproduce social injustices.

Although many reforms have been carried out since 1990, during the democratic governments, the main principles of the system have been left intact until recently. The extraordinary path dependency and inertia created by the initial structural reforms carried out in the 80s have proven to be difficult to confront and modify, especially in a context of a binomial political settlement.

Only in recent years have social movements, especially those led by students since 2011, been able to contest the hegemonic culture and promote viable and substantial institutional changes. Although it is too soon to assess the real impact of these attempts, new development paths are starting to open ahead.

Dissertation structure

Building on the perspectives outlined above, this dissertation attempts to understand key underlying institutions (formal and informal) that reproduce inequality and social rigidity in Chile, by focusing primarily on vicious dynamics taking place in the realm of education (school and tertiary level).

As a consequence, this dissertation also aspires to make a contribution to education policy and academic debate, using an institutional approach to analyse the education system from a broader

perspective that also incorporates power asymmetries and social dynamics beyond the education sector.

With this aim, this dissertation develops four essays from the perspectives of political economy and institutional analysis. While the first paper represents a conceptual effort arguing for the need to take an institutional approach to better understand inequality, the other focus on the education system, looking at its political economy (Paper 2), social norms (Paper 3) and social outcomes (Paper 4) in terms of social mobility and labour market trajectories of different social classes. The dissertation is therefore structured as follows:

Paper 1: Abstract

The first paper sets the scene by analysing the political economy of inequality in Chile from an historical perspective, highlighting the need to use a holistic institutional approach in order to unravel persistent structural inequalities. This essay applies such an approach to examine the power of elites to shape formal rules to their advantage, studying the income distribution within the top 1% and the key characteristics of the Chilean tax system. This institution is chosen for its centrality and significance to the distributive class struggle of a society, and because of its fundamental role in sustaining the expansion and quality of social services, such as education. The analysis shows that, among those countries for which comparable data are available, Chile's income concentration at the top 1% is the highest in the world,. Importantly, the data presented in this paper show that this level of concentration is higher than in the OECD countries when the latter had the same level of economic development as Chile today. This paper argues that the levels of inequality in Chile cannot be fully explained by market forces, as the neoclassical approach would suggest, nor by Chile's level of economic development; on the contrary, the analysis suggests the existence of an 'institutional lag' (exemplified by the current tax system), sustained by asymmetries of power. The study concludes that an institutional approach is more appropriate as a means of analysing inequality than alternative neoclassical theories.

Paper 2: Abstract

The second paper investigates the political economy of the Chilean school system and its role in the reproduction of inequality. Moreover, in the context of the increasing role of private education

around the world, this paper is an important contribution: Chile constitutes one of the oldest and most extensive voucher systems in the world, and thus represents a valuable experience from which numerous general lessons may be drawn. The paper theoretically and empirically examines the effects of neoliberal policy reforms on education quality and equity, studying a key pillar of education markets, i.e. the role of competition between schools as a driver for education quality improvement. From a theoretical point of view, this paper advances the understanding of education markets as formal institutions which have an important effect both on the overall learning outcomes and their distribution among different segments of society. Empirically, it articulates and analyses several administrative datasets, comprising the more than 10,000 private and public schools in the education system, to econometrically estimate the effect of competition among schools on learning outcomes of students, measured through national standardised test scores. This paper shows that competition has a negligible and negative effect on test scores throughout the country, and thus argues that education markets should not be considered as an adequate 'set of rules' with which to promote school improvement. The paper then offers an explanation of these findings, analysing each one of the main underlying assumptions of the voucher model in education, demonstrating through empirical evidence why they do not work in reality. Finally, it discusses the main policy implications.

Paper 3: Abstract

The third paper highlights the importance of informal institutions and their role in shaping individuals' preferences. It provides empirical evidence on the effect of social classes on the perceptions of reality, demonstrating that inequality affects the chances of poorer youths to transition successfully into higher education. This paper explores the mechanisms by which inequality detrimentally affects education attainment and thus social mobility, estimating and examining *ex-ante perceived* rates of return to higher education among students from different socio-economic status (SES) in Chile. In order to complete this research, an especially designed questionnaire and face-to-face survey was carried out among more than 500 Chilean secondary students from low, middle and high SES. The analysis of the resulting data provides new evidence showing that, at the aggregate level, students' estimated *perceived* rate of return corresponds accurately with the *actual* national mean (based on actual labour market data), as predicted by the Human Capital Theory (HCT). However, when data are analysed at the individual level, large

deviations from the mean are detected. Specifically, we find that low SES students report much lower perceived returns than their high SES peers, raising questions over the validity of the HCT as a pertinent policy framework in highly unequal societies. Taking into account the current university student loan system's interest rates, it could be rational for a considerable proportion of low and middle SES students to refuse to enrol in higher education, hindering their chances of social mobility. Underlying causes of these differences are explored, and policy implications discussed.

Paper 4: Abstract

The fourth essay analyses the joint effect of social class and institutional horizontal differentiation of the tertiary education system on intergenerational social mobility and labour market trajectories of graduates. For this purpose, it develops and applies a unique questionnaire and face-to-face survey to more than 1,850 graduates after a decade since their labour market insertion. This ambitious and complex process of data collection took 2 years to be successfully completed, and necessitated more than 30 part-time pollsters. To the best of our knowledge, the resulting dataset is the most complete and detailed source of its kind currently available in Latin America. The statistical and econometric analysis of this novel and robust data shows the existence of divergent labour market trajectories among professionals, who – despite having graduated from the same university and study programme – have increasingly different wages, job qualities, and hierarchical positions within the organisation for which they work, depending on their social background. In other words, the great equalising promise of higher education is only partly fulfilled in the Chilean case.

Paper 1:

Political economy of inequality in Chile: historical institutions, taxation and elite power

'The owners of Chile are ourselves, the owners of capital and of the soil:
the rest is masses who can be influenced and sold;
they do not matter either as opinion or as prestige'
(Eduardo Matte, Member of Chilean Elite, 1892).

1. Introduction

Chile has usually been considered a development success story within the Latin American region for its consolidated democracy, social stability and sustained economic growth. In 2010, Chile became the first South American country to join the OECD; in 2012, the World Bank classified it for the first time as a 'high income' country, achieving the highest GDP (PPP) per capita in the region (World Bank, 2015).

Despite these achievements, Chile seems to manifest two important paradoxes: firstly, behind its general façade of progress and prosperity, it hides a much more complex reality characterised by inequality and social injustice; secondly, over the last decades, Chile has embodied a unique case of high levels of inequality combined with relatively low levels of social conflict. The latter have only come to emerge since 2011.

What are the underlying roots of inequality in Chile? Why does an important part of the Chilean society seems to be at ease with such high levels of social injustice?[6] This chapter attempts to provide a conceptual framework and key clues for answering these important questions. The article is organised in four parts: the first provides a brief account on the levels of inequality of outcomes

[6] Since 2011, part of Chilean society has actively mobilised; since 2017, a new left-wing coalition, which strongly critiques the current state of affairs, has been created (Frente Amplio). Nevertheless, it is too soon to assess its relevance and impact in the medium- to long-term.

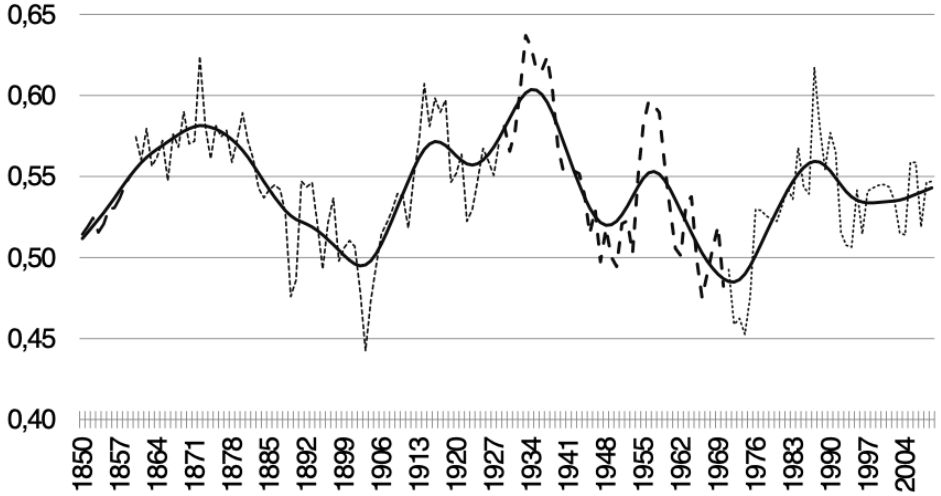
and opportunity in Chile; the second section critically analyses a variety of myths usually used to justify high levels of inequality, whilst also presenting an institutional analysis framework to aid better understanding of inequality in Chile; the third discusses drivers of institutional change and the role of different dimensions of power in the configuration and maintenance of unequal institutions and low levels of social conflict; the fourth and final part briefly summarises the discussion.

2. Chile: A Case Study of Extreme Social Inequality

Chile represents an extreme case of inequality worldwide. Its income distribution ranks as the 18th most unequal among 154 countries for which comparable data are available (World Bank, 2017). In 2015, its Gini coefficient reached 0.48 (CEPAL, 2017). This level is similar to the Latin American average – which, as a region, is ranked as the most unequal in the world (De Ferranti et al., 2004; Lustig, 2015).

These elevated levels of income inequality are not a recent phenomenon, but one that has characterised Chilean society since its origins. Although historical data are scarce, recent research efforts have allowed estimating income Gini coefficients that extend as far as the second half of the 19th Century (Rodriguez, 2017).

Figure 1. Historical Evolution of Personal Income Distribution in Chile: Gini coefficient 1850-2009



Source: Rodriguez (2017).

As Figure 1 shows, despite medium run variations (in some cases important ones, such as the egalitarian gains experienced between 1933 and 1973), income inequality has steadily fluctuated between 0.5 and 0.6 Gini coefficient points over the last 160 years.

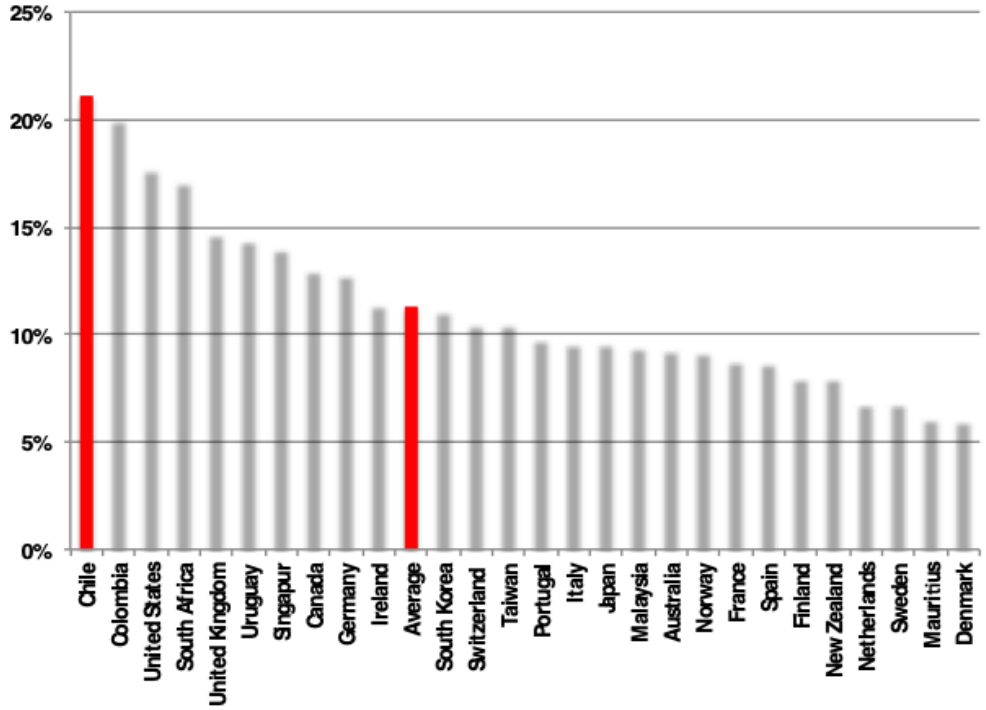
From this perspective, although it is a fact that the levels of inequality have decreased in the last 25 years from 0.52 Gini points in 1990 to 0.48 in 2015 (PNUD, 2017), this 'medium term' trend should not encourage excessive degrees of triumphalism. Indeed, inequality levels in Chile are still exceptionally high by any world standard, and are still located within the country's historical bounds.

There is no doubt that economic growth experienced in the last two decades has contributed to increase the quality of life of those at the bottom of the income distribution. Poverty rates have fallen from 68% in 1990 to 11.7% in 2015 (PNUD, 2017). Nevertheless, national income has historically been – and continues to be – largely captured by those in the top 1% of the distribution: the local elites.

Indeed, Lopez et al. (2013) estimate the proportion of GDP accrued by individuals in the top 1% of the income distribution during the 2005-2010 period, observing that the richest percentile successfully captured 21.1% of GDP. This proportion reaches 30.5% when capital gains are properly included.

When comparing Lopez et al.'s (2013) estimates with the latest comparable data made available for several countries in The World Top Incomes Database (2015), as shown in Figure 2, it may be concluded that the Chilean case represents a unique case of income concentration.

Figure 2. Income concentration: world top 1% income as % of GDP (2005-2010)



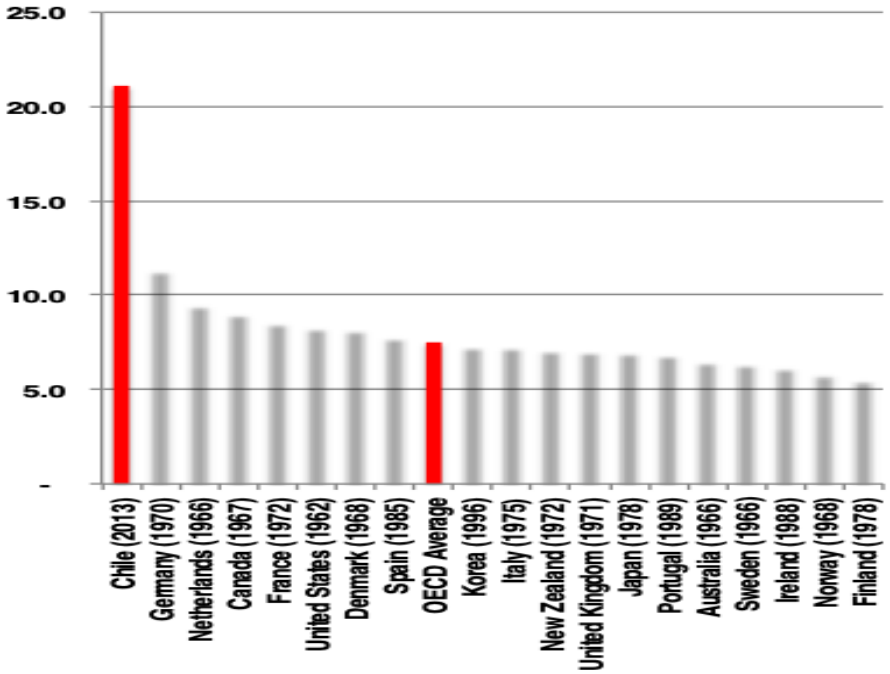
Source: Author's elaboration, based on The World Top Incomes Database (2015) and Lopez et al. (2013).[7]

The Chilean elite is capable of capturing 19% more income, in relative terms, than its peers in the United States and even 252% more than those in Denmark. When compared with the average, Chilean elites accrue 87% more income, as a percentage of GDP, than the average of those other countries in the sample. In conclusion, Chile's income concentration at the top of the distribution is the highest, considering those countries for which comparable data are available.

Some may argue that the high levels of income concentration observed in Chile could be explained by its lower stage of development. Nevertheless, if current Chilean concentration rates are compared with the historical concentration rates observed in OECD countries, i.e. when both shared a similar level of development (in terms of GDP per capita), the opposite conclusion is reached: Chile seems to be comparatively even more unequal than OECD countries, when these had Chile's current GDP per capita.

[7] Percentages represent 2005-2010 averages. Despite the fact that some countries provide information for recent years, the period 2005-2010 is used in order to analyse a comparable interval considering data availability for most countries in the sample.

Figure 3. Top 1% incomes when OECD countries had similar GDP per capita than Chile in 2013.



Source: Author's calculations based on The World Top Incomes Database (2015) and Lopez et al. (2013).[8]

In fact, Figure 3 presents the level of income concentration at the top 1% when OECD countries had a similar GDP per capita (PPP) to Chile's in 2013– the year after Chile officially became a high-income country, according to the World Bank classification. As this exercise shows, while Chile's elite accrued over 20% of GDP, the elites of OECD countries were only able to capture 7.5% of GDP, when they all had a similar GDP per capita (PPP) to Chile's in 2013. Therefore, it would seem that it is not a problem linked to Chile's development stage.

The extreme concentration in the upper tail of the distribution should be a matter of serious concern, as it is a key determinant of the overall distribution. Palma (2011) presents robust evidence showing that income inequality derives basically from a struggle between the top and bottom tails of the income distribution. He reveals the existence of two contradictory forces that constitute a common characteristic of distributions around the world: on the one hand, a centripetal

[8] Year in which each country had the same GDP per capita (PPP), at constant prices 2005, is shown in parenthesis. OECD average excludes Chile. Figures for the Netherlands, Norway, Sweden and United States are based on author's estimates of GDP per capita (PPP), at constant prices.

force operating to create a uniform pattern across countries, where 50% of the population, the one located between the 5th and 9th income deciles, obtains half of national incomes; on the other, a centrifugal force, which explains inequality differences observed between countries. These differences are the result of distribution struggles between the richest decile (10th) and the four poorest (1st to 4th deciles). The asymmetric power relations between these segments determine how the remaining 50% of national income is distributed. Therefore, the welfare of the bottom and upper classes are intimately intertwined.

Not only is the inequality of outcomes stark, but the inequality of opportunities as well. This should be expected, since international evidence shows that countries with high levels of income inequality tend to have lower intergenerational income mobility (Corak, 2013). Indeed, estimates show that Chile has lower levels of income mobility than several developing and developed countries, for which data is available (Nuñez and Risco, 2004; Corak, 2013). Similarly, Torche (2005) studies the levels of social mobility in Chile concluding that the pattern of class mobility is 'characterised by a strong barrier to mobility to and from the professional class at the top of the occupational structure but much higher fluidity between the middle and lower classes, a pattern consistent with high income concentration at the top' (Torche, 2014: 629). In other words, intergenerational mobility is allowed – but only within certain boundaries.

In sum, Chile constitutes a unique case study of extreme levels of inequality and social rigidity at the top of the social structure. These inequalities are not restricted only to the economic sphere, but, most importantly, also extend to the social and political spheres of society (PNUD, 2017; Rodriguez, 2017).

3. Justifications of Inequality in Society: Myths Meet Reality

There are four main types of explanation provided by the economic discipline to justify high levels of inequality: the first argues that inequality is necessary for economic development; the second argues that it is a normal and predictable consequence of development; the third emphasises its inevitability due to the existence of forces beyond human control (e.g. globalisation and skill-biased technological change); the fourth explanation highlights the importance of historical paths and underlying institutions. This latter argument may be separated in two sub explanations: path

dependency and institutional change-based explanations. This section explores the explanatory power of each one of these hypotheses in light of recent comparative evidence.

3.1. Growth-precondition myth: Inequality is necessary for economic development

Classical and several neoclassical economists have believed that inequality is necessary to generate incentives, stimulate investment and promote economic growth. Supporters of this view tend to argue that Chile's high levels of inequality have been necessary to sustain high economic growth rates. In fact, when Friedrich Hayek visited Chile in the 80s he declared in an interview:

> *As I have argued on other occasions, if redistribution were equal there would be less to redistribute as it is precisely the inequality of income which allows the current levels of production.*
>
> (Reality, 1981, cited in Cristi, 2000:23-58).

This line of thought is not new: it may be tracked back through the history of economic thought. Classical economists, such as David Ricardo (1817), divided society in three main social classes (landlords, capitalists and workers). According to his view, income concentration in the hands of the capitalists fostered economic growth, as they would reinvest their profits and put them to good use in productive activities. Keeping profit rates high was the key mechanism for promoting the process of capital accumulation. In fact, rising wages, which had the effect of reducing profit rates, constituted a threat to economic growth (Ricardo, 1817; Kaldor, 1955). Moreover, landlords and workers would tend to spend their income, due to their higher marginal propensity to consume, making no contribution to capital accumulation (Chang, 2011). From this perspective, transferring income to the working class would only reduce economic growth.

Neoclassical economists, such as Okun (1975), reformulated the Classical paradigm by arguing for the existence of a trade-off between efficiency and equality: reducing inequality could only be achieved at a large cost in terms of efficiency. Accordingly, Friedman (1980:136-137) argued that it was 'important to recognise how much we benefit from the very unfairness we deplore'. Following this line, International Financial Institutions (such as the IMF and the World Bank)

tried, in the context of the so-called Washington Consensus, to legitimate inequality as a socially beneficial phenomenon which created the right incentives and rewarded individuals for their effort, risk-taking, creativity and entrepreneurship. This view has changed in recent years (cf. Berg and Ostry, 2011).

Indeed, both classical and neoclassical approaches are flawed for several reasons. Firstly, historical evidence disproves these theoretical hypotheses. For example, during the three golden decades that followed the Second World War, developed countries experienced substantial improvements in the distribution of income, matched by elevated growth rates (Piketty, 2014). Similarly, the increased income concentration that has been observed in developed nations since the 1980s, especially at the top 1% of incomes, has been accompanied by lower growth rates (Chang, 2011). Moreover, recent comparative evidence using large panel data shows that high inequality is bad for growth. In fact, Alesina and Rodrik (1994) have found that higher levels of income and land inequality tend to be associated with lower economic growth rates. Similarly, Cornia (2004), analysing data for more than 70 countries, finds that economic growth rates tend to be hindered when inequality reaches a certain threshold (Gini coefficient above 0.45). Finally, Berg and Ostry (2011), using large panel data of countries, demonstrate that countries with high levels of inequality are unable to sustain long periods of high economic growth. In conclusion, high inequality not only affects the rate of growth, but also its sustainability over time.

Secondly, capitalists do not necessarily have a compulsion towards investment and innovation, especially in Latin America. Palma (2011) shows that private investment in the extremely unequal Latin America is, as a percentage of the income share of the top decile, less than half of what is observed in more egalitarian East Asian countries. Latin American capitalists, despite their elevated share in total income, do not seem to be pulling the wagon of investment and growth.

Thirdly, high inequality may create the problem of insufficient demand and macroeconomic instability. Karl Marx argued that excessive income concentration at the top of the social structure, to the detriment of the middle and working class, would tend to engender an economic crisis due to a lack of effective demand and inability of realising surplus value (Kaldor, 1955; Harvey, 2011). Also, since high-income individuals tend to have a higher marginal propensity to save (Dynan et

al., 2004), some economists argue that the higher current levels of inequality are promoting aggregate demand insufficiencies, lower economic growth rates and macroeconomic instability (Stiglitz, 2012).

Fourthly, and most importantly, high inequality and the resulting disproportionate empowerment of the economic elites enables these high-net-worth individuals to accumulate power to distort political and economic institutions (laws, regulations, government policies, etc.), giving way to monopolistic and rent-seeking behaviour that negatively affects economic growth (Acemoglu and Robinson, 2012; Stiglitz, 2012; Knight, 1992; Frank, 1971).

Fifthly, high levels of inequality negatively impact human capital formation, as has been evidenced in the case of Latin America in general, and Chile in particular (Engerman et al., 2009). Evidence shows that in the presence of credit constraints, high levels of inequality prevent a portion of the population from making optimal human capital investment decisions and therefore is detrimental to human capital formation and economic growth (Galor, 2012). Moreover, a high level of concentration at the top of the income distribution, usually allows elites to opt-out of public education and enroll in exclusive private schools. Consequently, elites have less incentives to pay taxes to fund public education, hindering the long-run development and quality of this education sector. Moreover, some authors argue that, in the context of high levels of inequality, privileged individuals are able to lobby against redistributive policies, such as schooling, hindering human capital investment and economic development (Saint-Paul and Verdier, 1996; Benabou, 2000, 2002).

Finally, evidence also shows that high inequality is not only bad for economic growth, but also for society as a whole (not only those at the bottom). It leads to increasing levels of crime, health problems, education inequality, social cohesion, and erosion of trust and democracy (Wilkinson and Pickett, 2009; Boix, 2003; Acemoglu and Robinson, 2006). As Wilkinson and Pickett (2009:28) conclude, ‘at almost any income level, it’s better to live in a more equal place.’

3.2. Predictability myth: Inequality levels are fixed or follow an expected pattern as a consequence of the economic development process.

Distributional concerns were essential for classical economists working in the 19th Century. Ricardo (1817:5) argues that 'to determine the laws which regulate this distribution (rents, profits and wages), is the principal problem in Political Economy.' Nevertheless, this problem was mostly neglected during the 20th Century by the discipline of economics (Milanovic, 2011). The main reason may probably be found in the works of Vilfredo Pareto and Simon Kuznets.

Analysing limited data from the late 19th Century, Pareto (1906) argues that the distribution of income in different European countries follows an almost inevitable pattern, which could be translated into a universal rule: the '80/20 law'. That is, the richest 20% of the population owned 80% of wealth, independent of the institutional framework in place in each country. Pareto thus argued that inequality was fixed in time and place. Elites could circulate, they could rotate, but inequality among groups would be preserved as old classes were overthrown and new ones took their place. Inequality was an unshakable natural fact of social life.

This changed later with the famous work of Kuznets (1955), who argued, with very limited available data[9], that there was a certain pattern relating the distribution of income to the economic development process of a country. Contrary to Pareto's law, inequality was not fixed in time; however, it would seem to follow a common pattern – an inverted 'U' – in relation to the country's developmental stage. In Kuznets (1955: 18) own words: ´One might thus assume a long swing in the inequality characterizing the secular income structure: widening in the early phases of economic growth when the transition from the pre-industrial to the industrial civilization was most rapid; becoming stabilized for a while; and then narrowing in the later phases´. Moreover, Kuznets (1955: 20) argued that ´the long swing in income inequality must be viewed as part of a wider process of economic growth´. In other words, inequality was mainly determined by the economic pathway of each country (beyond the impact of other social and political factors). According to this author, on the one hand, the main underlying factors negatively affecting the distribution of income were related to the higher marginal propensity to save of upper-income groups, and the

[9] According to Kuznets (1995: 26), his paper was ´5 per cent empirical information and 95 per cent in speculation, some of it possibly tainted by wishful thinking´.

process of urbanisation and industrialisation (related to inter and intra-sector income differences). On the other hand, the counteracting factors positively reducing income inequalities were related to expected modernisation factors, such as the increasing weight of incomes from the service sector which depended on human capital and talent (as opposed to the relevance of capital gains during the industrialisation phases), and the increasing social and economic dynamism due to entrepreneurship and the rapid creation of new industries. Beyond economic factors, Kuznets also recognised the relevance of the political and social pressure promoted by lower-income groups. This pressure accumulated during the initial phases of the economic development process and then, in the later phases, was used to mobilise ´legislative interference and political decisions´ that affected the income share of privileged groups, as the country moved towards higher economic levels (Kuznets, 1955: 9). However, under Kuznets´ perspective, social and political pressures were rather predictable outcomes of economic progress (normal dynamics of a ´free economic society´). Moreover, although he recognised that the ´legislative interferences´ resulting from political tensions played a role during the downward phase of Kuznets´ inverted U, he did not see them as the ultimate drivers of inequality reduction (Kuznets, 1955: 18-19)[10].

This theory had a harmful impact on policy makers and neoclassical economists. On the one hand, it suggested that inequality should not constitute an urgent matter of concern for policy-makers, since inequality would tend to diminish in the long-run as the development process picks up. On the other hand, neoclassical economists have usually used this argument to dismiss the importance of devoting time and effort to understanding the underlying forces of the distribution of income. In Lucas' (2004) own words, 'of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution.'

However, Kuznets' thesis has been discredited due to the substantial increase in the quality and quantity of longitudinal data available (Piketty, 2014; Ferreira and Ravallion, 2009; Bruno et al.

[10] Kuznets (1955: 18-19) stated that ´if there is some evidence for assuming this long swing in relative inequality in the distribution of income before direct taxes and excluding free benefits from government, there is surely a stronger case for assuming a long swing in inequality of income net of direct taxes and including government benefits. Progressivity of income taxes and, indeed, their very importance characterize only the more recent phases of development of the presently developed countries; in narrowing income inequality they must have accentuated the downward phase of the long swing´. In other words, policy changes supported and *accentuated* the downward phase of the curve, but did not cause it.

1998), showing that there is no deterministic relation between levels of economic development and income distribution across countries. As Piketty (2014:14-15) argues, 'the theory of the Kuznets curve was a product of the Cold War… the magical Kuznets curve theory was formulated in large part for the wrong reasons, and its empirical underpinnings were extremely fragile.' The evidence shown by Piketty debunks the inevitability of declining inequalities in wealthy countries, and demonstrates how easily egalitarian gains may be reversed. Similarly, Rodriguez (2017) convincingly shows that, in the case of Chile, inequality has not followed a predetermined pattern. In fact, for example, the egalitarian gains obtained between the mid 1930s and early 1970s were rapidly reversed between the mid 1970s and 1980s. Moreover, it must also be pointed out that the inequality decline (the downward slope) that Kuznets observed in his study occurred when developed countries were much poorer than emerging countries, such as Chile, are today. Thus, if inequality was predictably bounded to decrease with development, as observed in Europe after the 1940s, it should have strongly decreased several decades ago in Chile – a trend only observed since the 2000s.

Indeed, examining the evolution of inequality in Chile during the last 160 years, the data demonstrate no clear relation between levels of development and inequality (as shown in Figure 1, above). As a result, today we know that patterns of inequality are neither fixed (à la Pareto) nor follow a predetermined trajectory (à la Kuznets).

3.3. Inevitability myth: Inequality is a phenomenon caused by forces beyond human control, such as globalisation and skilled biased technological change.

One of the main explanations often used to justify the increasing high levels of inequality is based on the 'skill-biased technological change' hypothesis (Blau and Kahn, 2009; Katz and Autor, 1999; Berman et al. 1998). According to this view, technological change has revolutionised the global economy – and with it, the type of job requirements and workers needed to function adequately in this new scenario. Technology requires skilled workers who know how to operate new machines and computers in the workplace. By contrast, technological change would tend to substitute unskilled workers who perform routine manual and non-manual tasks (Autor et al., 2003). As a result of this skill-biased technological change, relative demand for skilled workers has strongly increased, relative to unskilled workers, driving skill premia and education returns upwards (Blau and Kahn, 2009). Consequently, this wage gap between skilled and unskilled workers would be

the main source of wage inequality. Since technological change is a phenomenon beyond the direct control of society and government, it is argued that inequality cannot be constrained.

Historical empirical evidence shows that technological progress does not need to breed higher levels of inequality, however. Skill premia are driven by the interaction between relative (skilled/unskilled) labour demand and supply. Whilst technological change mainly affects the demand side, its final impact on skill premia and wage inequality is nevertheless determined by what happens on the supply side. For example, as Goldin and Katz (2008) demonstrate, during the decades that followed the Second World War, the US Government enacted vital legislation and committed substantial public funds to promote higher education participation. This public support radically increased the number of college graduates, which allowed outpacing the relative increase of demand for skilled labour. As a result, skills premia decreased and wage inequality declined until around 1980, when supply of graduates started to slow down (Goldin and Katz, 2008). Similarly, Sapelli (2011) analyses income distribution trends in Chile, by age cohorts, and finds a decline among those cohorts born after the late 1950s due to the expansion of average education and the reduction of education attainment dispersion among individuals.

Other and new inevitability myths and sentiments arise as globalisation produces radical transformations in local economies and geographies, promoted by the de-regulated global financial capital sector, which creates new forms – visible and invisible - of expulsion of individuals from a sustainable society (Sassen, 2014). These forms of expulsions are happening as a consequence of, among other, the shrinking of the economies due to the monopolization of knowledge and technologies by a global elite (with the resulting increase in unemployment); the exclusion of small farmers due to global land markets, which expel communities from their territories; the pervasive financialisation of the economy; and the bio-degradation of the environment, due to new technologies in several sectors, e.g. mining sector. However, once again, none of these occur in the void. In fact, according to Sassen (2014: 2), "these expulsions are made. The instruments for this making range from elementary policies to complex institutions, systems, and techniques that require specialized knowledge and intricate organizational formats." As a result, they may and can be regulated and controlled with new and proper mechanisms. The problem is that many times regulations and mechanisms do not exist or need to go beyond national boundaries, and thus global

coordinating bodies to regulate multinational corporations are needed.

To be sure, technological change and globalization should not unequivocally translate into higher levels of inequality. It is how society responds to it that matters. Education, labour, tax and social policies are key determinants of the primary and secondary distribution of income. Markets do not function in the void; they are embedded in social institutions (Polanyi, 1944).

3.4. Towards a comprehensive conceptual framework: the key role of path dependency and institutions

As discussed above, the manner in which societies have explained and justified inequality has changed throughout human history. Although neoclassical economists have tended to disregard the central role of institutions, it has not been the case in other disciplines. Indeed, the preponderance of institutionally driven theories may be tracked across social sciences and humanities, all seeking to understand the origins of inequality among individuals.[11]

In the field of political philosophy, Jean Jacques Rousseau (1755), argued that men were equal in essence, challenging the Aristotelian theory of natural inequalities which had been widely accepted for two millennia. According to Rousseau, inequality arose from private property and men's propensity to constantly seek ways of distinguishing themselves from others. Inequality persisted over time because the powerful and rich were able to shape institutions to protect their interests. As a result of this view, inequality may be seen as a phenomenon that is both socially structured and structural: the former because inequality arises from unequal social interactions and relations of power, i.e. it is not a natural fact of life; the latter because these asymmetries are translated and solidified in institutions, which embody and reproduce the very same asymmetries that gave them birth. Such is the importance accrued to institutions in political philosophy, that they constitute not only the main cause of the origins of inequality but also of injustice. In Rawls' (1971:102) own words, 'the natural distribution is neither just nor unjust; nor is it unjust that persons are born into society at some particular positions. These are simply natural facts. What is just and unjust is the

[11] An important exception is Aristotle, who argues that men are naturally unequal, and thus the inequalities observed in society are only a mere reflection of essential differences. It is simply a matter of justice and proportional equality that those of supposed natural superiority should receive higher social benefits.

way that institutions deal with these facts'.

Institutions have also played a central role in founding sociological theories. On the one hand, Marx (1867) claimed that private property (which allowed the control of means of production) and the division of labour were key elements engendering exploitation and alienation of the proletariat by the capitalist class. Although for Marx it was the economic base that shaped cultural, social and political institutions (the superstructure), the latter also played a vital role reinforcing inequalities. Most importantly, this account assumes that capitalists control the state in order to shape laws and regulations, allowing them to protect their class interests and become the de facto *ruling class* (Keister and Southgate, 2012; Wright, 2005).

Weber (1922) views inequality and social stratification as a process arising from power struggles occurring in the economic, social and political sphere of society. For him, economic class, status and parties were the main (overlapping) elements through which social classes emerged in modernity and social competition for power was exercised. Power, in turn, proved vital to influence bureaucracies, which distribute authority and shape social life (Keister and Southgate, 2012; Wright, 2005).

Other sociologists have also highlighted the role of norms in the creation of inequality among men. Dahrendorf (1968) argues that the source of inequality is found in formal and informal norms, and the sanctions and rewards that are attached to them. Norms create social stratification, a rank order of social status, because they distinguish between those who comply and those who deviance from the socially expected norm of behaviour. This perspective contributes to a better understanding of inequality generating processes that go well beyond the economic sphere. Discriminatory practices tend to emerge as a result of the imposition of strict social norms that fix expected canons of behaviour, setting what ought to be valued and permitted, and what ought to be despised, restricted and/or excluded.

Finally, new institutional economists have also appended a fundamental role to institutions when explaining the roots of inequality. According to this approach, institutions can be understood as 'the rules of the game in a society' (North, 1990:3). These rules, laws and regulations, both formal and informal, not only determine the incentives, transaction costs and levels of uncertainty

affecting the exchange and resource allocation in a market economy, but also the definition of property rights and therefore, income distribution, social rights, status and power in society. In sum, the prevailing institutions in a country affect its economic growth, but also predominantly determine those who benefit from it (Knight, 1992).

Acemoglu and Robinson (2012:84) argue that 'the fundamental problem is that there will be dispute and conflict over economic institutions. Different institutions have different consequences for the prosperity of a nation, how that prosperity is distributed, and who has power.' Studying the historical development paths of different countries, these authors suggest the existence of two types of institutions, depending on their long run effect on growth and distribution of resources. On the one hand, 'Inclusive Institutions' are those that promote the wide and fair participation of all members of society in contributing to the economy and the benefits resulting from it; on the other, 'Extractive Institutions' are only designed to obtain and transfer wealth from vulnerable groups (the poorest and weakest) to the elites (the richest and most powerful). In light of this, it is possible to state that the underlying causes of the differences among men in a given society are found in its institutions.

North and Thomas (1973:2) have argued that factors such as innovation, economies of scale, education and capital accumulation 'are not causes of growth; *they are growth.*' In the same spirit, this dissertation will argue that low education attainment, precarious wages, and social exclusion are *inequality*. In order to understand the real *causes* of inequality, one must study the underlying key social, economic and political institutions in a society: its political constitution, level and progressivity of the tax system, prevailing welfare regime, bargaining power of labour unions and other labour market regulations (e.g. minimum wage), and the structure of educational system, among others.

When, in a country like Chile, the richest 1% of the population – its elite – is able to appropriate 30.5% of all goods and services produced every year, there would seem to be a serious problem with the institutional framework, at least from a distributional perspective. This explains the persistence and increasing power of social movements since 2011, demanding profound changes in the economic, social and political spheres.

In the next subsections, this paper provides examples of key institutions that have played an important role in the creation and maintenance of high levels of inequality in Chile. Firstly, it will briefly review some key institutional historical roots of inequality that characterised the colonial and postcolonial periods. Secondly, it will analyse the main features of a key contemporary institution – that is, the Chilean tax system – and its implications for secondary income distribution.

3.4.1. The origin of social inequalities: path dependency and the relevance of history

Although there is a considerable degree of agreement regarding the importance and impact of historical institutions over the current levels of economic development and inequality in Latin America, there is much discussion about the underlying causes explaining their specific formation (Bertola, 2011)[12].

Dependentista economists have stressed the key role of international imperialist powers and metropolitan economies in driving and structuring the world capitalist system, resulting in local institutions and an economic structure instrumental to the subordination of Latin America and its disadvantageous insertion into international trade (Frank, 1971; Baran, 1968). Structuralist economist, although not ignoring the inadequate integration to the world economy, put a stronger focus on domestic institutions (Prebisch, 1950). In fact, according to ECLAC (2019), ´recognising the asymmetric dynamic of innovation and job creation between the centre and the periphery and within the peripheral structure is key to understanding why the heterogeneity and extreme inequality characteristic of our region persist.´

Similarly, in order to understand the specific formation of Latin American institutions and their impact on current inequality levels, other researchers have focused on cultural or geographical differences between different regions (Landes, 1999). Alternatively, new institutional economists have taken into account the characteristics of the colonial power involved (Coatsworth, 2008), the

[12] Some recent researchers have currently questioned the relevance of colonial institutions (Williamson, 2010; Lindert and Williamson, 2016).

natural factor endowments (Engerman and Sokoloff, 1997) or the vital risks and diseases to which colonisers were exposed (Acemoglu and Robinson, 2012).

Despite this open debate, as mentioned above, most researchers studying the historical trajectory of Latin American countries highlight the relevance of colonial institutions in shaping the current distribution of social outcomes: 'the contemporary situation cannot be understood without recognising that extreme inequality emerged soon after the Europeans began to colonise the Americas half millennium ago, and has been reflected in the institutions they put in place.' (Sokoloff and Robinson, 2004:109-112). Moreover, the same authors highlight the biases built into the institutional arrangements by the local elites: 'the fundamental reason for the persistence of extreme inequality appears to have been the continued pattern of institutional change that favoured the interests of the elite and provided the bulk of the population with only limited access to economic opportunities.'

Indeed, research shows that the Latin American roots of inequality may be found in underlying colonial institutional arrangements pervading the economic, social and political sphere. Bertola (2011:46) argues that Latin American inequality ´was at a high level by the end of the colonial period, and that this kind of inequality can hardly be estimated merely in terms of a Gini-coefficient. What really matters is the kind of social and power relations underlying economic life and the distributional and technological dynamics they involved.´ In fact, this author argues that a continent ´with 25% of slaves and 60% of rural indigenous population deprived from private property, civil rights, education and political participation, as it was the case of colonial Latin America, can hardly be considered equitable.´ (Bertola, 2016: 20).

The inegalitarian institutions imposed during the colonial period might be observed in all spheres of social, economic and political life. In the social sphere, the exploitation of indigenous population was made possible by the establishment of 'Encomiendas'[13], which gave Spaniards 'legitimate' control over indigenous labour and the possibility of implementing schemes of forced labour, exploitation and systematic appropriation of economic surplus (Frank, 1971; Salazar, 2003).

[13] This institution was developed in the colonial period. It entailed a right provided by the Spanish Crown to ´protect´and ´evangelice´ natives in exchange for their (compulsory) labour.

Moreover, there were periods in Chile during which slavery of the Mapuches was allowed by the colonial power, as a punishment for their rebellion against the Crown. Additionally, as in the rest of Latin America and the Caribbean, there were also African slaves in Chile – although fewer in number compared to other latitudes. For example, the Black and Mulato population in Chile, at the beginning of the 19th Century, was around 10-12,000, of which approximately half were slaves. This condition was partially abolished in 1811, with the declaration that any new-born descendant of slaves would be free, and then finally and completely abolished (including adult slaves) in 1823 (Feliú, 1973). These institutions, such as the encomienda and slavery, produced a clear stratification of society based on ethnic origin and skin colour.

In the economic sphere, land concentration was a result of conquest, expulsion of indigenous people, unequal distribution of royal grants of land, and other various illegitimate methods of land acquisition, such as falsification of entitlements (Frank, 1971). The initial advantage given to the Encomenderos (who had access to forced labour) allowed them to rapidly accumulate wealth and acquire large portions of land, which in turn gave them access to further privileges. As Frank (1971:47) maintains: 'owners of land often became indistinguishable from owners of monopoly rights in international or domestic commerce, mining licences, means of transports, loan capital, civil and religious office, and other sources of privilege.'

These colonial institutions had an immense impact on the pattern of wealth concentration and distribution of property rights, even after independence. Land concentration persisted in Latin America during the postcolonial era, which contrasted with the situation in North America. In fact, at the dawn of the 20th Century while the percentage of males who owned land in the United States and Canada was 75% and 87% respectively, in Latin American countries – such as Mexico and Argentina – this proportion respectively only reached 2.4% and well below 30% in most provinces (Engerman and Sokoloff, 2002).

In addition to the Latin American trend, land distribution in Chile was also shaped by the state occupation and appropriation of the southern territories, in the late 19th Century, which were previously occupied by the Mapuche communities. These lands were redistributed and mainly

granted to the local elite and European immigrants using dubious mechanisms and criteria that hindered indigenous groups.

Moreover, land concentration gave the local elite an advantage over the rest of the population to exploit new business opportunities. For example, large landowners in Chile had a privileged access to loan and credit. In the 1850s, large landowners faced interest rates of 6% in the incipient financial market, while those for workers were as high as 24% (Rodriguez, 2017). This of course had a pivotal effect on the reproduction of inequalities.

In the political sphere, access to positions of power in the colonial administrative bureaucracies was racially stratified (Williamson, 2009). But, once again, political exclusion persisted even after countries gained independence. Bertola (2011:42) argues that 'Constitutions were designed to extend rights to the broad mass of the population, but ultimately they were limited and constrained by underlying forces, and in the end they gave political rights only to the white elites.' Conservatives and liberals, to the detriment of radicals, heavily determined the constitutional orders established after independence in most Latin American republics. As a result, due to 'their distrust of majority rule, they (*the conservative-liberal elite*) discouraged rather than promoted political participation, majoritarian assemblies, and popular debates' (Gargarella, 2010:228).

Laws governing franchise tended to be restrictive. For example, in 1869 in Chile, wealth and literacy requirements had to be met in order to vote (Sokoloff and Robinson, 2004).[14] This had a great impact on political participation. In 1869, only 1.6% of the Chilean population voted (Engerman, Haber and Sokoloff, 2000). Moreover, ballots were not entirely secret in Chile until 1958, thus allowing landowners to threaten and control the voting preferences of their workers in rural areas. In fact, after 1958, the proportion of right-wing (conservative) voters dramatically declined in rural areas where patron-client relationships were more prevalent (Baland and Robinson, 2008).

[14] It must be said that this is not an exclusive situation of Chile. In fact, this type of barriers existed in other countries, such as the United States. According to Chang (2002: 73), ´Universal male suffrage was introduced in 1870, but reversed between 1890 and 1908 through the disenfranchisement of the blacks in the Southern states. It was only restored in 1965´.

The exclusion of the majority from political participation allowed the elite to easily control the Chilean state, turning its monopoly of violence against those threatening their interests. This was especially clear during the late 19th and early 20th century. During that period, the power of the state was misused to obscurely distribute large territories that had recently been taken from the Mapuche indigenous communities in the south of the country, and brutally control and suppress the incipient labour movements demanding better working conditions. Indeed, the killing of Iquique in 1907, when the Chilean army massacred hundreds of protesters and their families, constitutes a dark moment in history (Rodriguez, 2017).

Since its independence, the truncated and low level of political participation in Chile has had an important impact on the provision of public goods. The case of education is paramount. The limited and biased political participation avoided the early expansion of education services, which would have benefited a large portion of the population (Sokoloff and Robinson, 2004). This probably demonstrates the capacity of conservatives to block progressive reforms, since these would have required increasing the tax burden, which – in the context of an unequal society – would have been borne disproportionally by the local elites. In fact, the expansion of education experienced in the 19th Century in Chile, although slow, may likely be better explained by the economic boom (which generated extra revenues and demanded skilled workers) and as part of a state policy intended to attract European migrants at the end of that century (Engerman, Mariscal and Sokoloff, 2009).

The existence of stark levels of social and racial discrimination and exploitation, land and income concentration, weak political participation, and inadequate levels of provision of public goods in the colonial and postcolonial periods, no doubt created the basis of an unequal and extremely hierarchical social structure that has endured to the present day. This situation has been verified by several studies investigating intergenerational income mobility looking at surname groupings in the long run. For example, Clark (2014) analyses the Chilean case following the income trajectories since 1853 of individuals sharing the same surnames. Historically, since the level of indigenous ancestry and social class tend to be inversely correlated (Cruz-Coke and Moreno, 1994), social groups are created differentiating them in terms of their location within an Indigenous/European ancestry continuum. Clark finds high levels of long run social rigidity. Individuals whose surnames match those of the 1850s elite/large landowners (e.g. Basques,

French, Germans, Italians) tend to have, 150 years later, levels of income that are substantially higher than the average income of their birth-cohort. In fact, at the upper end of the social ladder, current descendants of 1850s extra-large landowners, French and Germans have incomes that are 71%, 51% and 56% higher, respectively, than the cohort average. At the lower end of the ladder, Mapuche descendants receive incomes that are 25% lower than the average. These results are consistent with other studies researching social stratification and labour market discrimination in Chile. Nuñez and Gutierrez (2004) find that there is a 30% to 35% wage differential among professionals from different social classes (measured by last name of employee and other socio-economic variables), even after all other productivity-related factors are taken into account.

In sum, it is clear that the series of 'extractive' and unfair social, economic and political institutions put first in place by colonial powers and then consolidated in the newly independent nations by the conservative local elites, allowed privileged groups to benefit disproportionally from the developmental process, and to constantly distort and reshape property right for their own advantage, setting the long-run foundations of an unequal and divided society.

3.4.2. Current institutions are the main responsible of distributional outcomes: the case of tax policy in Chile.

Historical institutions (colonial and postcolonial in the case of Chile) are important for understanding the roots of social asymmetries. Nevertheless, they cannot provide a full account. Path dependency must not be confused with historical determinism. Comparative evidence provides a series of examples demonstrating that conscious collective social and political decisions can be made, regarding the levels of inequality that a society is willing to accept. Moreover, recent experience shows that collective choices can in fact reduce inequality in the short run. The construction of social democratic welfare states in many post-WWII Western European countries and the consequent reduction of inequality constitute an emblematic example of how a collective can use the public apparatus as a powerful equalising device.

Contrary to the latter example, social choices and political struggles may also give rise to unequal and unfair institutional frameworks. In the next sub-section, the main characteristics of the Chilean tax system are examined as a case study of a current key institution that has been deficiently

designed (perhaps intentionally), hindering the capacity of the state and its ability to reduce inequality. This analysis is made taking 2013 as a year of reference due to extensive comparable data availability. Also, this period is not affected by President Bachelet's 2014 tax reform, the gradual implementation and impact of which will only be possible to assess in the medium- and long-term. As a result, the prevailing tax regime until 2013 better explains inequality levels observed in Figure 2 (average income concentration in 2005-2010), and thus constitutes an adequate focus for this study.

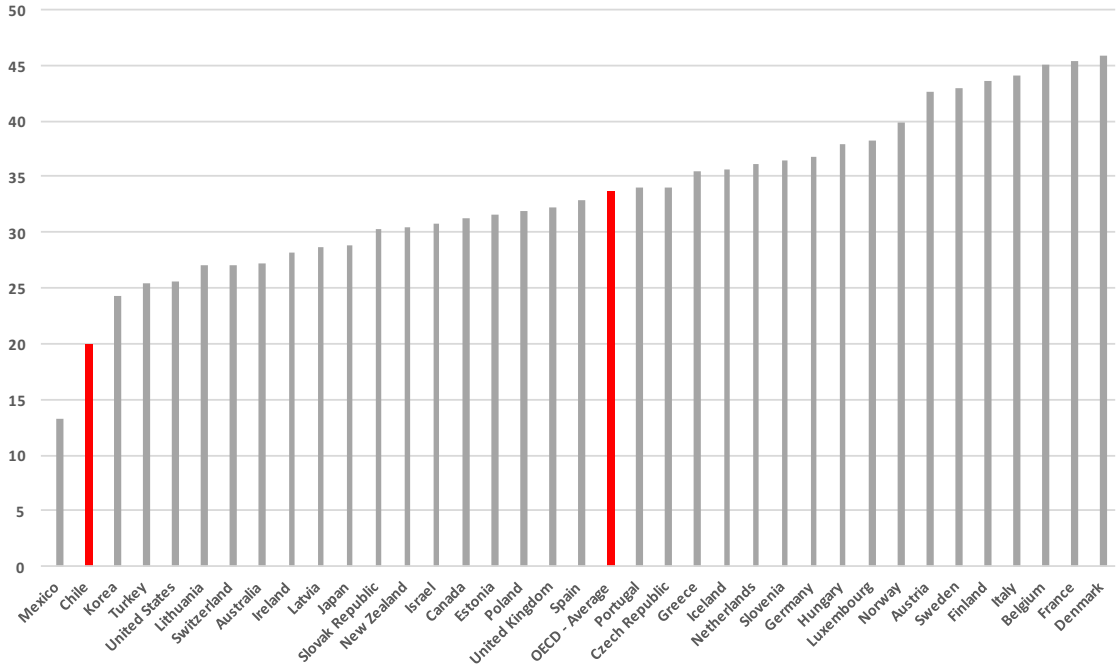
Tax policy in Chile: Collecting without discomforting the local elite

Chile's tax policy is inadequate to properly finance the consolidation of a welfare state capable of ensuring social rights and reducing inequality. A rigorous institutional analysis of the Chilean tax system reveals that it has three main weaknesses: (1) the level of tax revenues is low as a percentage of GDP; (2) it promotes a low level of progressivity, and (3) it has a low redistributive capacity.

Low level of revenues as percentage of GDP

Chile, as most Latin American countries, is characterised by a low level of tax revenues. Figure 4 presents the levels of total tax revenues as percentage of GDP in OECD countries. In 2013, the level of tax revenues in Chile reached 19.9% of its GDP, which is 40% lower than the OECD average (33.7%), and well below highly egalitarian countries such as Sweden (42.9%), Norway (39.9%) and Denmark (45.9%).

Figure 4. Total Tax Revenues as % of GDP (2013)



Source: Author's elaboration based on OECD (2019). OECD average excludes Chile.

A common argument used by those who oppose increasing the role and weight of the State in the economy is that Chile (and other developing countries in similar stages of development) cannot afford to increase taxes because it would mean a high burden for the economy. It is argued that raising taxes beyond the current level would eventually jeopardise economic growth rates and the competitiveness of the economy. Current high-income economies, the argument goes, can have high levels of taxes because they have reached a higher stage of development. In other words, it is a luxury only rich countries can afford. Developing countries are thus condemned to fiscal austerity and weak states until they catch up with developed countries.

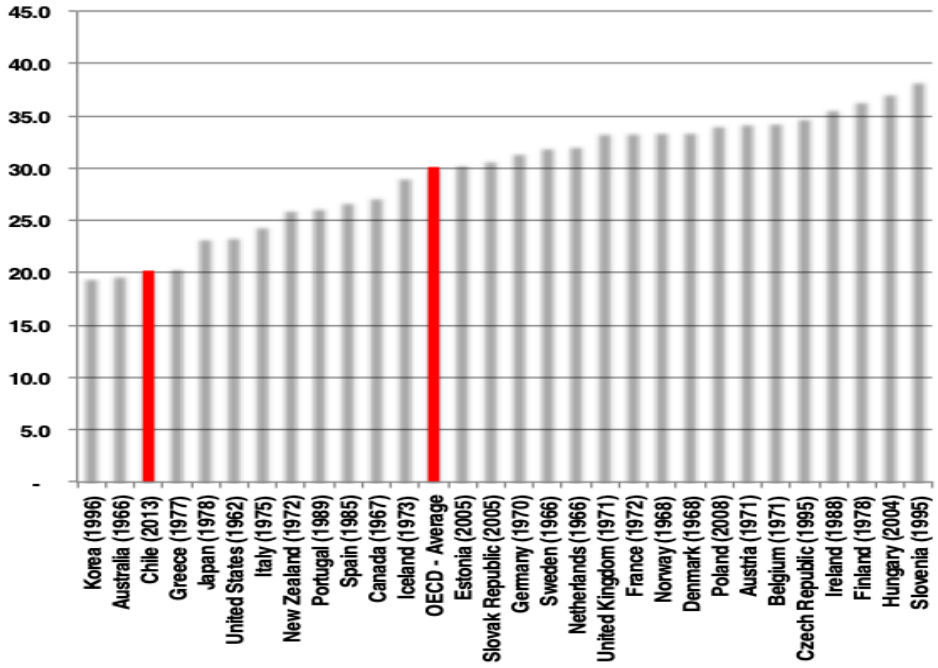
Three counter-arguments must be made in order to debunk the above myth. Firstly, historical evidence shows that taxes do not necessarily harm economic growth. In fact, there is no clear relation between both (taxes and growth rates). Among several reasons, this is due to the fact that the impact of taxes on growth depends not only on the level of taxes, but also on the quantity and quality (productive vs non-productive) public expenditure and investments carried out with the collected taxes. In the case of tax cuts, the key factor determining its impact relates to how this tax cut is funded. For example, tax cuts that are not financed with a reduction of public spending can

generate public deficits that end up increasing interest rates and thus reducing investment (Gale and Orszag, 2005). As a result, it would seem unsurprising that the relation between level of taxes and economic growth is unclear and difficult to determine. Indeed, several studies confirm that the correlation between the levels of taxes and the long-run economic growth rates is negligible or non-existent (e.g. for the United States see: Feldstein and Elmendorf, 1989; Stokey and Rebelo, 1995; Gale and Potter, 2002; Hungerford, 2012. For international comparative studies, see: Piketty, Saez, and Stantcheva, 2011; Mendoza et al., 1997). In some cases, researchers have even observed that higher taxes are followed by higher growth rates during the following years after the tax reform (Huang, 2012).

Secondly, historical evidence also shows that taxes do not necessarily hinder the efficiency and competiveness of the economy. Comparative data shows that there is no clear trade-off between levels of taxation and the degrees of competitiveness/innovation observed in the economy. In fact, those countries with higher levels of tax revenues and expenditure are also those who are most innovative and competitive in the World. Indeed, if comparisons are made using the world competitiveness index, it is possible to corroborate that Sweden, Norway, Finland, and Denmark – countries usually identified with large social democratic welfare states (Esping-Andersen, 1990) and the highest levels of tax revenues – are considerably more competitive than countries with smaller states and liberal welfare states such as the USA, Australia, the United Kingdom, and Canada (Bravo-Ortega et al. 2012).

A third argument, and usually neglected historical fact, is that Chile's current levels of total tax revenues as percentage of GDP are low even when they are compared to those achieved in the past by the OECD countries, when they had the same level of development that Chile currently has. That is, when OECD countries had the same real GDP (PPP) that Chile in 2013, they all had much higher levels of total tax revenues (Figure 5).

Figure 5. Total Tax Revenues as % GDP: Year in which all countries had similar GDP per capita than Chile (2013).



Source: Author's calculations based on OECD (2019).[15]

In fact, while Chile's tax revenues represented 19.9% of GDP in 2013, they constituted an average of 30.1% among the rest of the OECD countries when each had Chile's current GDP (PPP). This historical comparison allows an appreciation of the 'relative institutional lag' of Chile's tax system, even when development levels are taken into account. This illustrates that taxation is not something determined by an economy's developmental stage, but by political struggles and social choices regarding the levels of inequality that are defined as acceptable, legitimate and just in each society. In light of this, it seems clear that Chile is restricting its policy space and limiting the redistributive capacity of its state far more than the OECD countries did in their own time.

Three main factors explain the relative tax revenue gap between Chile and the OECD average: the lower levels of income taxes, social security contributions (especially those of employers) and property taxes (OECD, 2019).

[15] Year in which each country had the same GDP per capita (PPP), at constant prices 2005, is shown in parenthesis. OECD average excludes Chile. Figures for the Netherlands, Norway, Sweden and United States are based on author's estimates of GDP per capita (PPP), at constant prices. Tax revenue data for United States is based on year 1965 (1962 not available); and Iceland based on year 1975 (1973 not available).

Indeed, in 2013, taxes on income, profits and capital gains accounted on average for 11.1% of GDP among the OECD countries. Nevertheless, that same year, this tax component represented a proportion 38% lower in Chile (6.9% of GDP). This was brought about in several ways.

Firstly, tax expenditure (deductions, exemptions, credits, etc.) in Chile is considerable, specially when considering that it is highly regressive in its composition (Jorrat, 2013)[16]. In fact, in 2011 tax expenditures accounted for 4.79% of GDP in Chile, while in the Germany (2004), Korea (2006), the Netherlands (2006), Spain (2008) and the United States (2008), it reached 0.74, 2.48, 2.0, 4.55, and 5.97 per cent, respectively (OECD, 2010)[17].

Secondly, in Chile, the income bottom-threshold at which personal taxes begin to be required are comparably high. In 2010, all incomes below the average GDP per capita were exempt from paying taxes. This threshold is much more generous (higher) than the normal situation in OECD countries, where personal taxes are paid when incomes surpass 0.24 times the GDP per capita. Even when compared to middle-income countries, Chile's exemption threshold is 54% higher (Corbacho et al., 2013).

Thirdly, the level of income from which the top marginal personal income tax rate is applied is extremely high from a comparative perspective. In fact, in 2010, the top marginal tax rate in Chile affected individuals that had incomes higher or equal than 11.2 times the nation's GDP per capita. In contrast, in the OECD countries, on average, this marginal tax rate already comes into action when personal income levels reach as little as 2.4 times their GDP per capita. Even when compared to other middle-income countries, Chile's threshold for activating top income marginal taxes is 73% higher (Corbacho et al., 2013).

As a result of the previous point, the income distance between the minimum marginal tax rate and the maximum marginal tax rate is much larger than the one observed in OECD countries. In 2013, an individual in Chile had to transit 10 times the national GDP per capita from the moment he

[16] 75 per cent of tax expenditures in Chile is related to income taxes.
[17] Moreover, in 2018 Chile had nearly 200 tax expenditure provisions, which was above the number for the median OECD country, with available information in 2018 (Redonda and Neubig, 2018).

started being taxed to the moment he was taxed at the maximum marginal tax rate. This income distance was only approximately 2 times in the OECD countries, on average.

Finally, tax evasion also affects the capacity of the state to obtain the taxes it aims to collect. In 2009, evasion related to value added taxes (VAT) reached 18% and corporate taxes 34%. Jorrat (2013) estimates that, for every evasion percentage point in VAT and corporate taxes, the state experiences a loss of revenues equivalent to 0.1% and 0.05% of GDP, respectively. In other words, the Chilean state has a total revenue loss of 3.5% of GDP every year due to tax evasion. In order to assess this figure from a comparative perspective, Buehn and Schneider (2012) provide cross-country tax evasion estimates which demonstrate that tax evasion in Chile is significant. In fact, according to their estimate, while tax evasion in 38 OECD countries in 2009 represented 2.5% of GDP on average, in Chile it reached 3.4% (similar to Jorrat's (2013) estimates). In conclusion, Chile suffers a tax evasion rate which is 36% higher than its OECD peers.

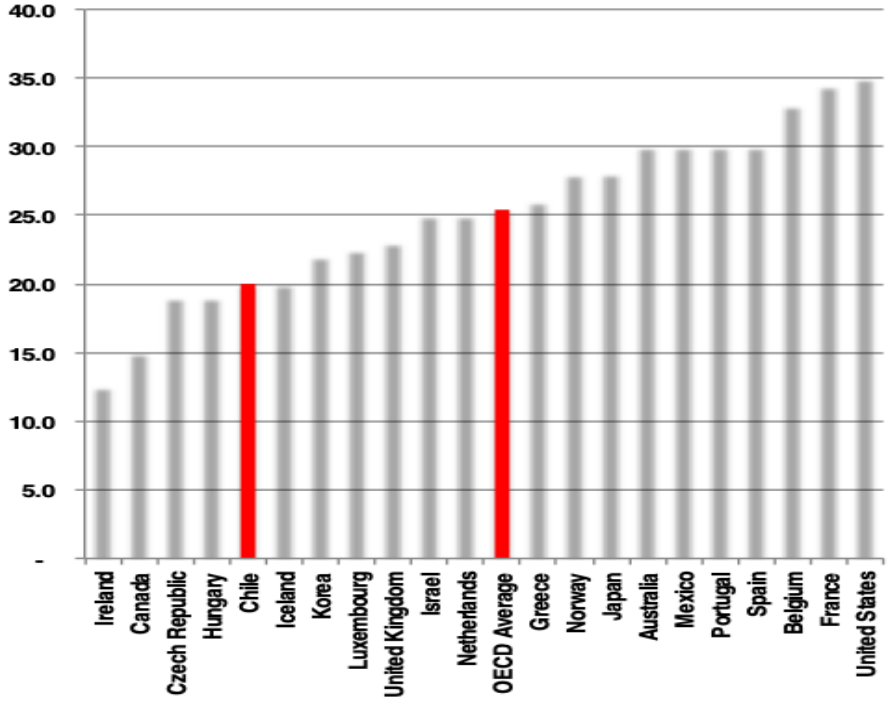
Low tax progressiveness

Any well-designed tax system should aim not only to collect the right amount of taxes, but also to do so in a progressive manner. From this perspective, the Chilean system is also deficient. Its low level of progressiveness is due to several reasons. Firstly, the composition of tax revenues is heavily skewed towards regressive indirect taxes that affect middle and lower social classes the most, such as value added taxes (VAT). For example, in 2013 VAT taxes represented 20.1% of total tax revenues in the average OECD country; in the same year, this component represented 40.8% of Chilean total tax revenues (OECD, 2019).[18] This compares unfavorably to other countries such as Germany (19%), Korea (17%), the Netherlands (17.8%), Spain (17.8%) and the United Kingdom (20.8%). It is even higher than other Latin American countries with similar GDP per capita in 2013 such as Argentina (23.9%), Panama (16.6%) and Uruguay (30.4%) (OECD, 2019).

[18] It must be noted that the excessive weight of this kind of taxation is mainly the result of lower total revenues, which increases its relative weight. That is, in terms of percentage of GDP, it is not higher that the OECD average.

Another factor relates to corporate and personal income tax rates, which are particularly low in Chile as compared to OECD countries. In fact, in 2013, while corporate tax rates were, on average, 25.4% in the OECD countries, in Chile they were 20% (Figure 6).[19]

Figure 6. Corporate Tax Rates (2013)

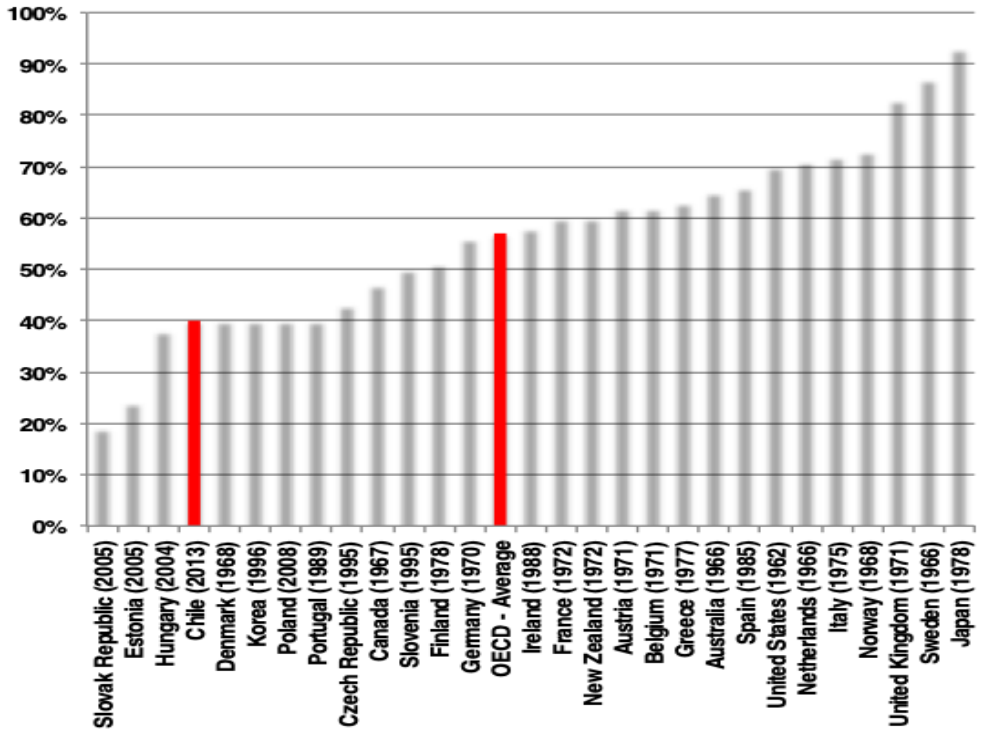


Source: Author's elaboration, based on OECD (2019). OECD average excludes Chile.

Similarly, top marginal personal income tax rates are lower in Chile than the current international standard. While in 2013, top marginal tax rates reached an average of 43.5% among the OECD countries, it stood at 40% in Chile (and was lowered to 35% as a result of the 2014 tax reform). Although this difference seems rather small (3.5 percentage points in 2013), it transforms into a substantial gap when we repeat the exercise of measuring the level of top marginal tax rates when OECD countries had a similar level of development (GDP per capita (PPP)) to Chile in 2013. As shown in Figure 7, OECD countries used to have top tax rates around 57%, on average – that is, 17 percentage points higher than the 2013 Chilean tax rates (and 23 percentage points higher than the rate prevailing after 2014 tax reform).

[19] It might be argued that, in practice, Chile has a corporate tax rate of 0%, since it has a 100% integrated system wherein corporate taxes constitute a credit for personal income taxes. This was partially modified in the 2014 tax reform.

Figure 7. Top Marginal Personal Income Tax Rates:
Year in which all countries had similar GDP per capita than Chile (2013).



Source: Author's calculations based on 1975-1999: World Tax Database, Office of Tax Policy Research.
2000-2008: OECD Tax Database.[20]

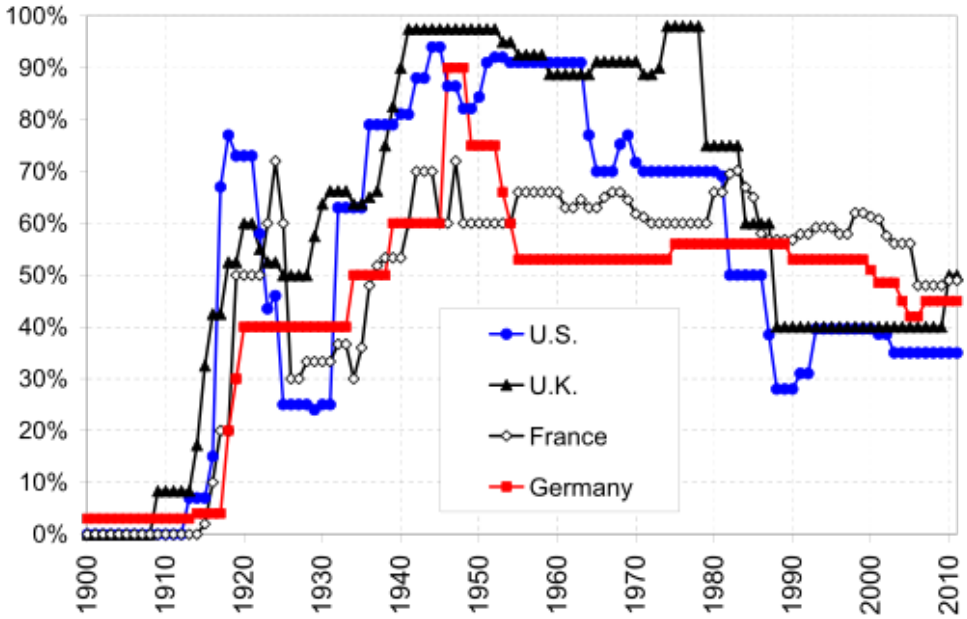
Once again, this historical comparison allows the debunking of the myth that Chile, due to its development stage, should not increase its top tax rates because it would have a negative effect on investment and economic growth. Defenders of this myth argue that only developed countries can bear the luxury of taxing the rich in society; if Chile did so, the argument goes, it would negatively affect incentives, frighten away investors and create a burden for capital accumulation and growth. These arguments do not seem to be based on historical data.

Leading economies such as the United States, United Kingdom, Germany and France are useful to illustrate this point. As shown in Figure 8, all of them sustained top income tax rates well above 50% for several decades in the 20$_{th}$ Century, even when they had lower income per capita than

[20] Year in which each country had the same GDP per capita (PPP), at constant prices 2005, is shown in parenthesis. OECD average excludes Chile. Figures for the Netherlands, Norway, Sweden and United States are based on author's estimates of GDP per capita (PPP), at constant prices. The OECD only provides top marginal personal income tax rates since 1975. Thus, countries that reached the level of GDP per capita (PPP) of Chile (2013) before that date are assigned the 1975 tax rate.

Chile currently does. Moreover, these decades coincided with decades of high economic growth, the so-called golden age of capitalism.

Figure 8. Historical Top Marginal Income Tax Rates (1900-2010)



Source: Piketty and Saez (2012).

A detailed analysis of Figure 8 shows that the UK and US kept top tax rates at 70% or above for more than four decades, between the mid 1930s and beginning of the '80s. Moreover, after the Second World War, they both had several periods in which rates were 90% or higher.

The most important lesson provided by these countries is that the high level of top marginal income tax rates certainly did not prevent them from leading the world economy (especially in the case of the United States), although it did provide them with one of the most egalitarian periods of their history.

Low redistributive capacity

The deficiencies of the Chilean tax system may also be corroborated by looking at its redistributive capacity. That is, in relation to its ability to reduce income inequality after taxes are collected and government transfers are made. As Figure 9 and many other studies (e.g. Goni et al., 2011) demonstrate, the progressiveness of the Chilean taxation and social protection system is insignificant. The state's intervention leaves the distribution of income practically unaltered. For

example, in 2013 in Chile while the distribution of income resulting from the labour market (primary distribution) was 0.50 Gini points, that which prevailed after taxes and transfers (secondary distribution) was 0.47 – in other words, only a 0.03 points difference. This is quite a unique case for OECD standards since, in general, most OECD countries are able to reduce inequality substantially through government intervention. For example, in 2013, OECD countries shown below were able to reduce 0.18 Gini points on average – that is, six times more than Chile.

Figure 9. Pre / Post Taxes & Transfers Gini (2013)

Source: Author's elaboration, based on OECD (2019).

Using Esping-Andersen's (1990) classification of welfare regimes, Figure 9 confirms that social democratic welfare states (prevailing, for example, in Norway, Denmark, Finland, Belgium, and Sweden) tend to have greater levels of final distributional equality. Conservatives are less egalitarian, but are also able to reduce income gaps considerably through taxes and redistribution. The regimes of liberal welfare states are the least egalitarian and have the smallest capacity to redistribute. Nevertheless, Chile's case is anomalous, resisting comparison even with the most liberal regimes, such as that which prevails in the United States. In conclusion, the Chilean state stands out for its inefficacy to alter the country's socio-economic reality.

4. Institutional Change: drivers and the role of power

The elevated levels of inequality observed in Chile give rise to several questions. Why are institutional frameworks that sustain social injustices not modified? Why, despite alarming disparities, does social conflict seem to be moderate?[21] A better understanding of the drivers behind institutional persistence and change is warranted, and this section therefore briefly explores some tentative answers.

Although there is no single theoretical consensus of institutional emergence and change among researchers, most of them may be classified by three main approaches: utilitarian-functionalist, cultural-sociological, and power-distributional (Thelen, 2003).

The utilitarian-functionalist approach explains the emergence and change of institutions in terms of their functionality and capacity to solve collective action problems (Thelen, 2003). Their relevance rests on their capacity to reduce uncertainty and transaction costs, and promote exchange. As a result, the main driver for change is efficiency gains (maximisation of aggregate welfare). From this viewpoint, institutions emerge and evolve as a result of: (1) unintended interactions among actors seeking to reduce transaction costs; (2) competitive selection processes of institutions (resembling a Darwinian approach, in which the most efficient persist); and/or (3) intended design of rational utility-maximising individuals (Groenewegen et al, 2010). This approach seems unconvincing, and inadequate explains why countries fall into the trap of inefficient institutions. If institutional change is efficiency driven, inadequate institutions should be replaced within a reasonable timeframe – yet this has not happened (at least not in the Chilean case). In fact, although high levels of inequality have impeded an open and efficient use of talents and hindered economic development in Chile, numerous unequal/inefficient institutions have persisted. As a result, it is possible to question (at least in part) the explanatory power of this approach, on the basis of its inappropriateness as an explanation of the persistence of unequal institutions.

[21] Recent social movements since 2011 seem to constitute a new trend, although it is still too early to assess the persistence and long-term impact of this phenomenon.

The cultural-sociological approach perceives institutions as embodying shared cultural scripts and beliefs regarding how the world works (Thelen, 2003). As Scott and Meyer (1994:234) argue, institutions correspond to the 'construction over time of a social definition of reality such that certain ways of action are taken for granted as the 'right' if not the only way to do things.' Despite its importance, the cultural-sociological approach seems to be more relevant for explaining persistence rather than institutional change in the short- and medium-term. In fact, in the Chilean case, this account would seem to inadequately explain the sudden, radical and most significant structural changes (neoliberal reforms) experienced in the modern history of the country after 1973 (under the Pinochet dictatorship, which in fact had a significant impact on inequality levels). This does not mean that cultural scripts are not relevant to consolidate changes that may be driven by power struggles in the first place; in fact, as Thelen (2003:217) argues, 'it turns out that in many cases changes in power relations hold the key to creating the openings in which new scripts (or scripts previously only in the margins…) can become more central.' Thus, this approach may prove to be most useful in combination with the power-distributional approach.

The power-distributional approach (and the extensive historical evidence that supports it) shows that institutions emerge and change as a result of conflict, asymmetric power relations and imbalances between different social groups, with each one fighting for their own benefits (Thelen, 2003). Institutions are shaped by those who have greater ability to impose their terms, those with more political and economic power – in other words, the richest 1% of the population that is able to influence the institutional design and the definition of property rights affecting the regulation and functioning of diverse spheres of society. As Knight (1992:20) puts it, 'institutional development is a contest among actors to establish rules which structure outcomes to those equilibria most favourable for them.' If we apply this approach to our case study, it certainly sheds light regarding the previously discussed deficiencies and 'relative institutional lags' of the Chilean tax system. These defects would not be the result of efficiency-driven decisions, but the outcome of power struggles among classes, which have most certainly allowed the Chilean elite to limit taxation and block recent reforms in this sphere. In fact, this is exemplified by the 2014 tax reform (one of the most important in decades), when, after several negotiations (and despite the explicit political commitment of President Bachelet to promote a progressive tax reform), the top income marginal tax rate was reduced from 40% to 35%.

Within this power-based approach, it is also important to realise that power is not only exercised by domestic elites, but also by international actors. As the historic analysis of the Chilean economy reveals, foreign interest groups have played a considerable role shaping national policies, domestic structures and property rights (especially those linked to the exploitation of natural resources and creation of monopolies) for their own benefit,[22] in accordance to Chile's subordinate integration and status within the world economic system (Frank, 1971).

In order to fully reveal the explanatory capacity of power-distributional approaches, it becomes paramount to gain a better understanding of the concept of power and the way it is exercised. Indeed, power is a complex concept.[23] For Hobbes, it entailed a conception of cause and effect, described as an 'agent' acting on a passive 'patient' (Ball, 1987). This conception influenced Weber, who defined power as 'the probability that one actor in a social relationship will… carry out his own will' (Weber, 1922:53). It is important to note that, in this case, the agent is able to carry his 'will' even when others, who are affected by it, oppose it. This conception might be applicable to the use of coercion and brute physical power over an opponent, as well as other forms of exercising power in the context of democratic political systems. In fact, the capacity of a government or political actor to carry on its will and promote its objectives through an open and deliberative democratic process is considered the observable or 'one-dimensional' account of power (decision-making facet developed by Dahl). The latter might be distinguished from the 'two-dimensional' expression of power that includes the possibility of exercising power in a more veiled and unobservable manner through 'closed door negotiations' (agenda-setting facet developed by Bachrach and Baratz). As Ball (1987:398) exemplifies:

> *[one actor] C might exercise power by controlling the agenda, thereby limiting the discussion, debate, and decision-making to 'safe' issues which do not threaten C's interests. Or C might be able to take advantage of biases built into the political system that tend to favour C's interest over R's. Or R, anticipating defeat and/or reprisal, might be unwilling to challenge C on a particular issue.*

[22] Mainly Spanish in the 16th and 17th Centuries, British in the 18th and 19th Centuries, and American in the 20th Century.
[23] This discussion draws on Ball (1987), which elaborates a lucid synthesis of the different conceptions of power.

In other words, the fact that we are not able to observe R challenging C (and losing) or C explicitly exercising power over R (and prevailing), does not mean that power relations are not operating.

The implicit key assumption made by both previous accounts of power, which is challenged by the 'three-dimensional' approach (developed by Lukes), is that actor R (the one resisting and/or being affected by C's will) is aware and knows which are his (R's) real interests. Indeed, in accordance to Marxist theory, if R is not aware or able to know what his real interests are, or has an incorrect understanding of them, then his potential agreement with C's views might not be in his 'real' interest, but only apparent based on his mistaken views (false consciousness). As Ball (1987:399) argues, 'the most effective way in which C can exercise power over R is to shape R's very beliefs about what is and is not in R's interest.' This way, conflict is minimised and C's power made invisible – despite being strongly exercised.

These different manners of interpreting and analysing power seem most useful and pertinent to understand the Chilean case and the ability of its elite to exercise its economic and political power to shape the local 'rules of the game'. Indeed, there is evidence showing that the structural institutional transformations that Chile experienced since the neoliberal reforms (promoted from 1973 onwards) were in many cases driven by the intention of the elites to advance their own interests, reversing the egalitarian gains achieved in previous decades (Monckeberg, 2015).

Chile's recent history shows how all dimensions of power have unfolded in a rather sequential manner. The coercive dimension of power was clearly exercised by the conservative local and international forces determined to eradicate the Marxist threat and its progressive reforms from Latin America during the second half of the 20th Century. In fact, in 1973, the democratically elected socialist government led by Salvador Allende was overthrown by the armed forces (directly supported by the CIA), putting an end to its agenda of structural economic and social reforms. As Pinochet's dictatorship unfolded, civil rights were violated, political rights suppressed, and social rights reduced to a minimum. Real social spending declined, poverty increased and inequality escalated. Chile quickly changed from being the second most equal country in Latin America in the early 1970s, to the second most unequal in the '90s (Garreton, 2013). Simultaneously, the economic elites benefited from increasing deregulation and (in many cases corrupt) privatisation

of public enterprises and services that allowed them to accumulate even larger shares of national income and wealth (Monckeberg, 2015).

The hidden sphere of power (two-dimensional account) started being heavily exercised by the right-wing parties and economic elites once the country transitioned towards democracy in 1990. The Political Constitution of Chile, which had been designed and imposed in 1980 during the Pinochet dictatorship, now played a key role in democracy, structuring the political playing field through the electoral system, designated senators and undemocratic voting schemes (Garreton, 2013). The electoral system that favoured the elections of right-wing candidates, together with undemocratic rules that allowed introducing representatives of the armed forces into the parliament as designated senators,[24] allowed the conservatives and the armed forces to be overrepresented in the Congress.

Moreover, the Constitution established undemocratic voting schemes to approve or change organic laws[25], which required a 'qualified quorum', i.e. from 4/7 up to 2/3 of votes from members of parliament. Thus, although in theory Chile recovered its democracy in 1990, in practice the conservatives maintained a disproportionate power and control over the legislative process thanks to the 'hidden' provisions established in the 1980 Constitution. Any important legislative change would therefore require confidential negotiations and the consent of the minority right-wing coalition. As result, the democratic popular expression, participation and will of the Chilean majority were suppressed and institutionally restricted. In fact, economic and political elites now not only had the power of shaping institutions, but also of obstructing their reform, increasing the 'transition costs' involved in the process (Khan, 1995). As Jaime Guzman, one of Pinochet's top collaborators and key intellectual authors of the 1980 Constitution, once commented:

> *The Constitution must ensure that if the opponents come to rule, they may be constrained to follow a not so different plan of action than the one we would aspire, because – allow*

[24] In fact, Pinochet himself became a designated Senator after stepping down from power.
[25] Organic laws are those special laws that address issues ´protected by the constitution´ and therefore require more than a majority of votes (at least 4/7 of total Congressmen) in order to be modified.

the metaphor – the range of alternatives that the playing field imposes upon the players is limited enough to make the contrary extremely difficult.[26]

Finally, the power of the conservative elites was exercised in Chile in a subtle manner (à la Lukes) by acting on society's values, perceptions of inequality, and the criteria it uses to judge and legitimise injustices. In fact, it would be normally expected that the existence of high levels of inequality, such as those in Chile, would give rise to social conflict and political mobilisation of middle and lower social classes for redistributive policies (as anticipated, for example, by the median voter theorem (Meltzer and Richard, 1981)). Nevertheless, social discontent and demand for redistributive policies have been quite moderate in Chile for more than two decades (1990-2010). Social conflict has only started to build up since the 2011 social movement, which progressively contested a series of neoliberal policies inherited from the Pinochet Era. In this context, how can we explain this paradox of general social peace and rampant inequality?

One hypothesis is that neoliberal policies enforced since the Pinochet Era did not only affect formal institutions, but also the criteria by which they are judged. As argued by Wegener (2000: 75), 'the stability of a society, the absence of anomie, of normlessness, or even revolt, depends on a conception of justice that, if it is accepted by its members, provides legitimacy to the social institutions and the state'. In fact, the egalitarian ideologies and discourses promoted during the 1960s and early '70s in Chile, stressing collective values, equality, the state, social rights and redistribution of income, seem to have been partly substituted after 1973 by neoliberal and individualist ideologies. These emphasised individualistic values, freedom, markets, private property, meritocracy, equality of opportunities and the eradication of poverty. Inequality, as an object of analysis, was intentionally removed from public discourse and national debate (Garreton, 2013). It would be thus the conscious or unconscious adoption of the neoliberal ideology by the majority of the Chilean population, which explains the legitimacy of higher levels of inequality and resulting social stability (Gomez, 2012).

Interestingly, Gomez (2012) argues that one of the main supporters of the neoliberal ideology has been not solely the elite, but also the middle class. This class has embraced the individualistic and

[26] Author's translation.

meritocratic discourse and the inequalities it creates, because it helps to distinguish it from the lower classes. Whereas universal social rights and public provision, for example in education, tend to eliminate social differences, a dualistic public-private model of provision of education, such as the one existing in Chile, creates profound differences between the lower classes, which send their children to under-financed free public schools, and the middle class which enrolls their youngsters in fee-charging private subsidised schools. These types of mechanisms not only create a sense of distinction, but also allow the latter to secure access to better positions in the labour market and thus reproduce social inequalities (Bourdieu and Passeron, 1964; Bourdieu and Passeron, 1990).

The cultural acceptance of neoliberalism by the Chilean middle classes, which saw the shrinking of the state and experienced the removal of universal social benefits, seems consistent and a consequence of an intended inferiorisation process promoted by the elites and social media to implicitly devalue those who receive social assistance from the state, as failed individuals who lack effort, entrepreneurship skills, and talent to succeed in a market society (as the one promoted since 1973 onwards). In this context, a part of the Chilean middle class seems to have embraced the "Chilean dream" (local version of the American Dream), where effort and responsibility are rewarded in the labour market, and social rights as a communitarian ideal is substituted for the right to compete in the market, demonstrating that anyone can reach the "top of the hill" if they are honest, talented and hardworking. Jock Young (1999: 22), analysing the American society (one upheld by local neoliberal elites as the model society to be followed), discusses a similar perspective:

> *In the American Dream the ideal is equality of opportunity: all get a chance to compete in the meritocratic race, but it is the winners who get the prizes and the losers who naturally do not. And losers fail because of individual qualities, it is their fault that they have lost (see Merton, 1938). The notion of citizenship has, therefore, a strong stress on legal and political equality and much less on social equality. It is a cocktail glass society where social and cultural focus is on the successful and where winners, more and more, take all (see Frank and Cook, 1996). In a way, then, social citizenship is something to be earned by hard work and forthrightness ('the American way'): it is not a right of citizenship.*

From an empirical perspective, Castillo (2011) studying public opinion surveys in Chile, shows the importance of ideology in legitimising inequality. As shown in his study, individuals' ideology has a statistically significant effect over the wage gap size judged as 'just'. In fact, those individuals who believe in individualistic values tend to legitimise higher wage gaps than those who support egalitarian values. Whereas egalitarians tend to demand redistributive policies and create social dissensus, individualists tend to justify and legitimate larger inequalities, thus contributing to the legitimation and justification of those inequalities. As a result, as proposed by Castillo (2011), it is not difficult to accept the hypothesis that the neoliberal policies imposed in the Pinochet Era promoted individualistic values in the population, and thus provided the cultural and ideological grounds for the acceptance and legitimation of higher levels of inequality. This may well explain the apparent paradox of high inequality and (aside from specific social movements) general social consent.

Additionally, it may be argued that societies that are exposed to higher levels of inequality tend to be more permissive of high inequality in the long run. In fact, Castillo (2012), studying the Chilean case, confirms the hypothesis that 'perceived' levels of inequality have an important effect over the size of wage gaps that are considered 'just' by society. Reality acts as a cornerstone upon which normative judgements are built – that is, those who perceive higher levels of inequality are also those justifying higher levels of it. Perhaps Alexis de Tocqueville (1835: II.13) was correct to point out that:

> *When inequality of conditions is the common law of society, the most marked inequalities do not strike the eye; when everything is nearly on the same level, the slightest are marked enough to hurt it. Hence the desire of equality always becomes more insatiable in proportion as equality is more complete.*

5. Final Remarks

Chile represents a complex case study of economic growth and general social consent, combined with persistent extreme levels of inequality. Economic growth has reduced absolute poverty rates, but inequality has persisted unchallenged.

Although classical and neoclassical economists have tried to justify inequality as being necessary for capital accumulation and growth, recent datasets show that inequality hampers economic development. Moreover, contrary to most dominant theories, inequality is not inevitable (fixed in time and space), nor does it follow a predictable path determined by the country's stage of development. Although technological change and globalisation constitute important challenges, comparative evidence shows that it is how countries (and the institutions they put in place) react to globalisation and technological change that determines their final impact in the distribution of income. As a result, we argue that it is how institutions are shaped and who they serve that really matter. Market forces are of course relevant, but they should operate embedded within institutional frameworks that limit their possible outcomes.

Investigating Chile's underlying institutions is key to understanding the profound roots of inequality, with both historical and current institutions playing an important role. Nevertheless, although historical institutions are important for providing a better understanding of the role of path dependencies, it is current institutions that must be scrutinised and reformed in order to ensure desired levels of equality and social justice. This has not proven to be an easy task, especially because institutions are usually the product of social struggles that reflect and reproduce asymmetries of power in society. It is in fact the consistent facilitation of an extreme concentration of economic and political power among the Chilean elite that allows this group not only to accrue a highly uneven portion of society's fruits, but also to 'convince' by coercion and/or persuasion that the unfair final distribution of outcomes is actually just and beneficial to all.

Paper 2

Why Education Markets Fail:

Unravelling the Political Economy of Educational Vouchers in Chile[27]

1. Introduction

The increasing role of private actors in education is a growing phenomenon around the world (Ball, 2009; World Bank, 2016). The introduction of parental choice, the increasing importance of private funding (fees), and the growing participation of private providers constitute a trend in many developed and developing countries. In some cases – mostly in developed countries – this trend has been driven by austerity measures; in others – mostly in developing countries – by a lack of fiscal and administrative state capacity to provide universal access to all its citizens.[28] Although advocates of education market reforms have usually justified their position using theoretical models, international comparative evidence regarding the performance of education quasi-markets[29] seems to be inconclusive.

In that context, this paper analyses the political economy of educational vouchers in Chile – an important case study, since it constitutes one of the oldest and most extensive voucher systems in the world and thus represents a valuable line of enquiry from which numerous lessons may be drawn.

[27] A preliminary version of this paper was presented at the UKFIET Conference at the University of Oxford (September, 2015).

[28] It must be argued that the lack of fiscal capacity observed in many developing countries is not a consequence of their stage of economic development. It is the result of the incapacity of these states to properly tax high-income groups or, from another perspective, the capacity of these groups to effectively block substantial tax reforms (González, 2019).

[29] Quasi-markets differ from traditional markets in several ways (one or more of three) according to Le Grand (1991: 1260): *´not-for-profit organisations competing for public contracts, sometimes in competition with for-profit organisations; consumer purchasing power in the form of vouchers rather than cash; and, in some cases, the consumers represented in the market by agents instead of operating by themselves´.*

This paper is organised in the following manner. Section 2 introduces the basic idea behind education markets, tracing it back to classical economists in the 17th Century. Section 3 briefly outlines the main elements of the Chilean voucher system and offers general appraisal of the current situation. Section 4 examines the role of competition between schools in Chile. Section 5 examines the assumptions underlying education markets, in an attempt to explain why competition fails to be a strong driver of education quality improvement. Finally, Section 6 presents the policy implications and conclusions.

2. The Political Economy of Markets of Education: Historical Elements.

Throughout modern history the role of education markets has been intensely debated among intellectuals. Even in the 18th and 19th Centuries, British classical economists, such as Adam Smith and John Stuart Mill strongly disagreed with each other on the role of the state, markets, choice and competition in education. Indeed, despite the general agreement in favour of providing public funding for education for those unable to pay school fees, there was no consensus regarding the mechanism through which this funding should be provided: subsidising schools *versus* families (West, 1967).

Based on his observations and comparisons between the Scottish and the English educational systems prevailing at the time, Smith defended the importance of empowering parents, choice and competition among providers and teachers so that they would adapt to parents' demands and increase educational quality. Applying free market principles to education, Smith (1776:281) firmly believed that, if families were free to choose, 'they would soon find better teachers for themselves than any whom the state could provide for them.' Smith alleged that the state should mainly provide resources for infrastructure and avoid covering teachers' salaries, which should be covered through fees in order to empower parents (West, 1964). John Stuart Mill, in contrast, was not in favour of extending the market logic to education. He believed that parents were incompetent judges as consumers of education: 'the uncultivated cannot be competent judges of cultivation' (Mill, 1817:953). As a result, he reasoned, 'Is the buyer always qualified to judge of the commodity? If not, the presumption in favour of the competition of the markets does not apply to

this case' (Mill, 1817:953). Mill's perspective prevailed in most western countries during the 19th Century, but the debate was just starting.

Although first put forward by Tom Paine, it was Milton Friedman's proposal written in 1955 which really promoted the idea of delivering extensive public funding for education through vouchers. As had the classical economists, Friedman (1955) recognised the importance of providing state funding for education based on its social benefits (externalities):

> *A stable and democratic society is impossible without widespread acceptance of some common set of values and without a minimum degree of literacy and knowledge on the part of most citizens. Education contributes to both. In consequence, the gain from the education of a child accrues not only to the child or to his parents but to other members of the society; the education of my child contributes to other people's welfare by promoting a stable and democratic society.*

Nevertheless, he contested the idea of direct public provision of education, due to its inefficiency and risk of monopolising what is taught (indoctrination). In his opinion, funding should be channelled through vouchers handed to parents, who, in turn, could offer them to private providers (for- and not-for-profit), expanding parents' choices, promoting school competition, and thus fostering innovation and quality improvement. The role of the state was to be kept to a minimum and limited to regulatory duties. Friedman (1955) argued:

> *Governments could require a minimum level of education which they could finance by giving parents vouchers redeemable for a specified maximum sum per child per year if spent on "approved" educational services. Parents would then be free to spend this sum and any additional sum on purchasing educational services from an "approved" institution of their own choice. The educational services could be rendered by private enterprises operated for profit, or by non-profit institutions of various kinds. The role of the government would be limited to assuring that the schools met certain minimum standards such as the inclusion of a minimum common content in their programs, much as it now inspects restaurants to assure that they maintain minimum sanitary standards.*

Although some initial vouchers experiments were made in the seventies in the US (Levin and Belfield, 2006), Friedman's proposal only became strongly influential in the 1980s and especially the '90s, in the context of the Washington Consensus.

At that time, influential empirical evidence making the case for choice, decentralisation and re-regulation in the United States became available and seemed to shift the balance towards education markets. For example, Chubb and Moe (1988) argued that private schools outperformed public schools due to the specific institutional environments regulating each type of schools, which shaped their organisational characteristics. While public schools are controlled by democratic/political institutions – in the form of hierarchical bureaucracies – private schools are shaped by market forces, making them more effective, autonomous and responsive to parents' demands. Chubb and Moe (1988:1084) conclude:

> *It is instructive that the private schools, which are products of an institutional system that decentralises power to the producers and immediate consumers of educational services, tend to develop precisely the sorts of organisational characteristics reformers want the public schools to have. Some sort of voucher system, combining broad democratic guidance with a radical decentralisation of resources and choice, is at least a reasonable alternative to direct control.*

In this context, a wave of reforms swept through educational systems in the UK, US and Chile, among other countries. Le Grand (1991:1257-63) described the resulting progressive creation of quasi-markets in the following terms:

> *All these reforms had a fundamental similarity: the introduction of what might be termed 'quasi-markets' into the delivery of welfare services. In each case, the intention is for the state to stop being both the funder and the provider of services. Instead it is to become primarily a funder, purchasing services from a variety of private, voluntary and public providers, all operating in competition with one another. The method of funding is also to change. Resources are no longer to be allocated directly to providers through a bureaucratic machinery […] at least in theory […] this not only extends the choice of users, it gives them real power; in the battle for resources, the uncooperative, the*

> *insensitive and the recalcitrant will lose out, while the helpful, the considerate and the flexible will flourish. It may even help the poor, for under many of the quasi-market proposals they will have a measure of real economic power; if suppliers do not respond to their wishes, they can take their business elsewhere. Hence the outcome may be both more efficient and more equitable.*

Despite the positive initial expectations and views held by the proponents of these reforms, some experts in the ’80s and ’90s were already raising several concerns about their possible failure as a model for social policy. Many warned about the uncertain outcomes of these reforms in relation to efficiency and equity. Le Grand (1991:1266) argued that ‘the list of potential problems with quasi-markets is impressive.’ Indeed, according to that author, schools’ reactions to market incentives are difficult to foresee due to the indeterminacy of their final objectives, which could be profit, turnover or social welfare. Also, there would probably be an upward pressure on total costs as a result of increasing advertising activities, transportation expenditure (resulting from the elimination of catchment areas), and conspicuous inputs incurred by competing schools, aggravated by asymmetries of information.

Equity concerns resulting from cream skimming and social segregation were also foreseen. In fact, since most of academic performance variance between schools is accounted by pupils’ abilities and social backgrounds, and only a minimal proportion accounts for the actual ‘effectiveness’ of the school, most providers would tend to compete not by raising their effort, efficiency and academic quality, but by selecting a more favourable (intellectually and socially) pool of students (Glennerster, 1991).

Despite these concerns and inconclusive empirical evidence, education markets have expanded. Although the trend towards implementing education markets has accelerated around the world since the 2000s, it has likely nowhere been as radically and extensively implemented as in Chile since the early 1980s.

3. The Chilean Voucher System: A General Tentative Appraisal

3.1. Education in Latin America: Between the Public and Private Spheres.

Throughout Latin American history, education has moved between the private and the public sphere (Tedesco, 2012). In colonial times (16-19th Centuries), education was mainly perceived as a privilege oriented towards the local elites. As a result, it was greatly controlled by the Catholic Church and located in the private sphere. It was only from the early 19th Century, in the context of the wars of independence and the separation between church and state, that education was relocated to the public sphere, becoming part of a social project and playing an important role in the consolidation of nation-states. From the 1930s, education became a key element of a larger strategy of industrialisation and social change. This trend was changed and education's role transformed during the 1980s and '90s as a result of the liberal reforms promoted under the Washington Consensus. Once again, education would mainly return to the private sphere, being increasingly governed by market forces (Cecchini et al, 2015).

3.2. The Chilean model: key elements

Since the early years as a new independent republic and throughout the 19th and most of the 20th Century, the Chilean state developed an education system characterised by a dominant and hegemonic public sector (Bellei, 2015:14). Although private provision existed from the beginning (being even partly eligible for state funding), its subordinate position would only be transformed during the 1980s as a consequence of liberal reforms.

In 1980, a major reform was carried out. A voucher system was put in place, i.e., a demand subsidy (subsidy per student) provided directly to schools depending on the number of students attending each one of them. The main idea was to give parents freedom of choice and generate greater competition between schools.

Also, state schools were transferred to local governments (municipalities), which created several problems. Firstly, many municipalities did not have the technical, pedagogical nor bureaucratic capacity to manage schools. Thus little support was provided by local authorities to improve schools´ quality. This issue was especially critical, since municipal schools could not select their

students -as private subsidised could- and thus enrolled the most disadvantaged children and those with most learning difficulties within the system. Secondly, municipalisation created further funding inequalities among public schools. Indeed, while wealthy municipalities provided extra funding for their municipal schools, poor municipalities were not able to do so. Thus, public municipal schools had different levels of funding depending on their location, which undermined the very constitutive idea of an egalitarian public education system for all.

In addition to municipalisation, free entry of private subsidised schools (PS) was promoted. These schools were state-funded. Both non-for-profit and for-profit schools were encouraged. Teachers lost their public servant status and became regular workers. The objective of this regulatory change was to introduce more flexibility in teachers' labour market and to allow wages to fluctuate according to market conditions. Finally, a standardised system to measure and monitor the quality of education was implemented.

Under democratic governments, further reforms were implemented. A new Teachers' Regulatory Framework (Estatuto Docente) was approved in 1991, regulating the terms of employment of teachers in the municipal sector (e.g. a scale of teacher wages was created). Additionally, in order to enable parents to provide additional resources for the education of their children, a cost-sharing scheme was implemented in 1993 to benefit PS schools (Financiamiento compartido). Due to this reform, parents could pay a monthly fee determined by each school (within a pre-established limit), that could complement the funding provided by the state in order to increase the total funding available in that school.

Although several programmes and reforms were implemented in the 1990s and 2000s, the main structure and logic of the system was preserved (Bellei, 2015). However, an important reform was carried out in 2008 with the approval of the Subvencion Preferencial Act, which introduced state accountability measures for the first time (i.e. schools were classified according to their academic performance and, accordingly, faced high stakes). Moreover, this reform adjusted the value of voucher (subsidy per student) to the socio-economic background of each student. As a result, schools serving poorer students received a higher subsidy for those students.

A major reform was carried out in 2015 as a result of massive and continuous student movements. This institutional change banned for-profit-schools, eliminated the cost-sharing scheme and prohibited selection practices. These changes have been gradually implemented since 2016, beginning a new chapter in the evolution of the Chilean educational system.

3.3. Current Situation: weaknesses and key challenges

Judging the overall evolution of the Chilean educational system is not an easy task, since there are no control groups (where vouchers have been implemented universally), baselines or comparative measures required to evaluate the changes in outcomes experienced during the relevant period (1980-2016). For example, in relation to academic performance, the National Quality Assessment System (SIMCE) currently in operation has only provided full comparative test scores since 1999 (Cox, 2003).[30] Moreover, it is difficult to distinguish between the impact of changes in the level of educational expenditure and the effects of the prevailing institutional framework.

Despite these limitations, a general approximation of this evaluation may be done analysing the available data in regards to three main objectives of any educational system: academic quality, equality and social cohesion.

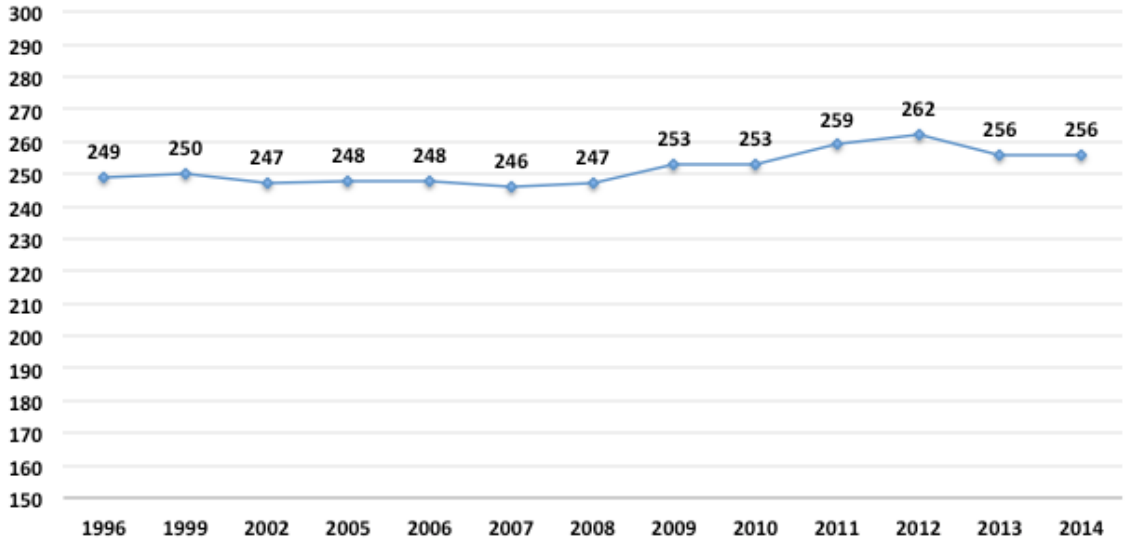
Academic Quality: the education system has serious weaknesses, many of which seem to be related to the current institutional framework. In fact, Levin and Belfield (2006:635) after reviewing several studies analysing educational effectiveness of voucher programmes conclude that 'evaluations of small-scale voucher programs in the US show largely neutral effects'. In the case of Chile, although some quality improvements have taken place (Gallego, 2002; Cox, 2003), it is fair to argue that after three and a half decades of the implementation of vouchers, market reforms have been far from delivering the promised quality improvements (McEwan and Carnoy, 1999; Hsieh and Urquiola, 2002; OECD, 2004). An interesting piece of evidence comes from international academic assessments in Science and Maths (IEA and TIMSS), in which Chile has participated multiple times; two measures, however, are particularly instructive. The first dates back to 1970, a decade before the market reforms, and the second to 1999, approximately two decades after the reforms. Since there are another 12 countries that also took both tests, it is

[30] Although using equating methodologies, it is possible to compare SIMCE results starting 1996 (Cox, 2003).

possible to compare Chile's performance to theirs in order to assess the relative academic improvement that the market reforms may have promoted. Hsieh and Urquiola (2002) analyse this evidence and conclude that Chile's relative performance worsened during the period. Moreover, based on PISA test results, and despite recent improvements, it is possible to argue that Chile performs much worse than expected based on its GDP per capita and per student expenditure (OECD, 2007).

National tests are another source of valuable information. Figure 1 presents comparable average test scores for Maths (SIMCE) for 4th grade between 1996 and 2014. This 18-year data series shows a long run trend that is mostly horizontal and stable. At least for this period, no dramatic or relevant continuous improvements are observed.[31]

Figure 1: National Average Test Scores – Maths, 4th Grade (1996-2014)



Source: Author's elaboration based on SIMCE (2014), Bravo (2011) and Cox (2003).

Although a slight improvement (7 points) took place between 1996 and 2014, this represents only a small increase equivalent to approximately 0.14 standard deviations in two decades. Moreover, most of these improvements were experienced from 2008 onwards, as tougher government

[31] These results are somewhat similar for language tests in 4th grade. On the other hand, 8th grade offers a somewhat contradictory situation (13-points decrease in language and 11–points increase in Maths). Finally, 12th grade shows also an inconclusive situation, although slightly more optimistic (19-points increase in Maths (2003-2014) and 1-point decrease in Language (2003-2014)).

interventions and accountability measures were progressively put in place (e.g. 'Subvencion Preferencial' law). That is, as the system started moving away from the more laissez-faire approach of the free market.

Social Cohesion: An important objective of any education system is social cohesion and inclusion. From a human rights perspective, education systems should guarantee equal treatment to all members of society, avoiding any type of negative discriminatory practices and ensuring equal access to quality education for all. Education should constitute a sphere of social encounter, where a common social experience can be forged and democratic values shared and transmitted among its citizens. Diversity within schools should be valued as a means to develop civic tolerance and individual autonomy (Levinson and Levinson, 2003). In relation to this objective, education quasi-markets present clear deficiencies and create several contradictions. Segmentation of families according to their preferences, characteristics and capacity to pay constitutes an expected outcome of any market. In education this translates into a partitioned educational system, where schools and families sort themselves in homogenous groups, excluding those who are different in racial, ideological and/or socio-economic terms. One way of looking at this issue is through social stratification measures. The OECD (2013) analyses this phenomenon measuring the difference in socio-economic status between students in privately and publicly managed schools. Using this indicator, they report that 'universal voucher' systems have approximately 2 times the level of stratification than 'non-voucher' systems.

This was in fact is something foreseen and accepted by Friedman (1955), when he acknowledged that southern states in the US were suggesting a voucher system mainly to evade the 1954 Supreme Court ruling against segregation (Brown vs Board of Education). In fact, he stated:

> *Under such a system, there can develop exclusively white schools, exclusively coloured schools, and mixed schools. Parents can choose which to send their children to. The appropriate activity for those who oppose segregation and racial prejudice is to try to persuade others of their views; if and as they succeed, the mixed schools will grow at the expense of the nonmixed, and a gradual transition will take place.*

As this statement makes clear, choice in these terms allows segregation to reach intolerable degrees that oppose an acceptable understanding of education in a democratic modern society. The extent to which social segregation happens will compromise the capacity of the educational system to fulfil one of its crucial purposes: social cohesion. Indeed, international evidence shows that, when given the choice, parents will tend to choose schools that serve children socially similar to theirs – even at the expense of enrolling in a lower academic quality school (Weiher and Tedin, 2002).

The Chilean experience also confirms these findings. According to Valenzuela, Bellei and De los Rios (2013), the Chilean educational system is more socially segregated than the spatial segregation registered in the city (social segregation of neighbourhoods). Moreover, school segregation has increased in the last decades, apparently driven by variables inherent to education markets (level of privatisation, school choice and fee-paying). Indeed, segregation seems to be exacerbated by the importance of private expenditure in education. Education market advocates argue that parents should have the freedom to contribute additional resources to the system. This would allow families with a higher degree of educational commitment to use their financial resources to improve the quality of their schools (Jofré, 1988). Although this could initially seem democratic and even positive, it actually allows economic inequality between families to obstruct equality of opportunities, hindering any possibility of levelling the playing field among citizens.

In the Chilean case, school fees have been promoted in the private subsidised sector since 1993, and allowed in public schools only at secondary level. A decade later, 72% of private subsidised schools and 24% public schools charged extra fees to parents, generating a strong socio-economic segmentation of the educational system (Garcia-Huidobro, 2007). As a result, Marcel and Tokman (2005) find that spending per student varies considerably between types of schools. In 2003, private independent schools and private subsidised schools spent 200% and 20% more than municipals schools, respectively.

In this context, Garcia-Huidobro (2007) shows that the level of social segregation by type of provider has increased (Table 1).

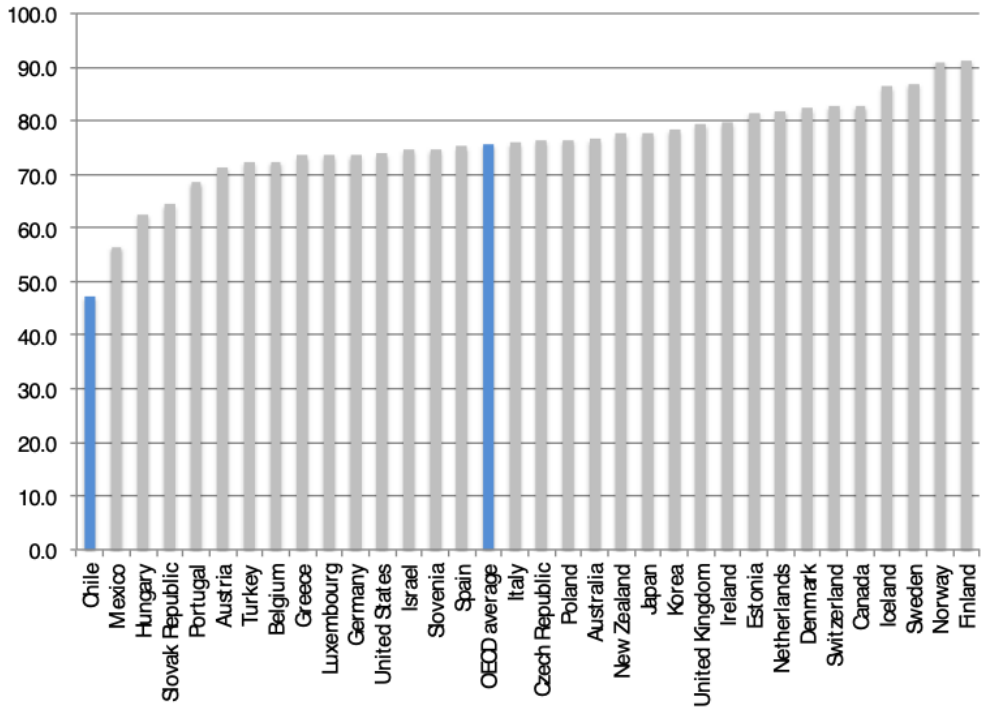
Table 1. Distribution of Enrolment by Family Income and School Type

	Income Quintiles						
	I +II		III		IV+V		Total
Type of school	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**	
Private paid	21%	10%	13%	13%	67%	76%	**100%**
Private subsidised	47%	41%	22%	24%	30%	35%	**100%**
Public	65%	68%	18%	18%	17%	14%	**100%**

Source: Author's elaboration based on Garcia-Huidobro (2007).

Public schools have become ghettos 'specialised' in low-income families. The percentage of poor students (quintiles I and II) enrolled in public schools increased from 65% to 68% between 1990 and 2000. Upper and upper-middle income families enrolled in this type of school decreased from 17% to 14%; in private schools, meanwhile, the percentage of poor students in their classrooms decreased by 11 percentage points, whilst the percentage of upper and upper middle-income students increased by 9 percentage points.

Figure 2. Social Inclusion Index 2012



Source: Author's elaboration based on OECD (2013).

These findings are consistent with international studies. PISA 2012 results show that the Chilean education system is the most segregated among more than 60 countries participating in this assessment (OECD, 2013); in other words, Chile has the lowest level of social inclusion, measured

in terms of the degree of socio-economic diversity of students within schools.[32] Here, only 47% of the total variation of student socio-economic status may be observed within schools, compared to 76% in the average OECD country.

Equality of learning opportunities and outcomes: some advocates of education markets claim that competition is a 'tide that lifts all boats' (Hoxby, 2003) – thus, all schools (public and private) and students (poor and rich) should benefit from market forces. Yet this does not correspond to what has been commonly observed in reality, both in Chile and elsewhere. Internationally, studies show that the level of segregation of the educational system negatively affects outcomes gaps due to the presence of peer effects. In fact, as long as markets promote sorting and segregation of students by socio-economic background and academic ability, poorer and lower ability students will tend to be clustered together and will not be able to benefit from interacting with peers with higher levels of cultural capital or ability. Zimmer and Toma (2000), using a large dataset for five different countries, show that peer effects significantly affect performance, and that this effect is non-linear (positive but decreasing). Moreover, when taking into account interaction effects (between students' own ability and their classmates), the authors show that low-ability students are the ones most affected by peer effects, as opposed to high-ability students who appear to be less vulnerable to this phenomenon.

Segregation also hinders equality of opportunity and increases performance gaps between different social classes, through the level of resources invested in public education. As long as upper classes are able to opt out of the public system, they will resist higher taxes necessary to fund it adequately, prolonging its lower status and quality. There is historical evidence of this. For example, after the US Supreme Court's 1968 Green vs County School Board of New Kent County decision to actively enforce and promote racial desegregation of schools in the United States, a rapid growth of public education expenditure took place. This was mainly triggered by white constituencies' concern to ensure adequate levels of quality after integration took place. Before this event, southern states invested considerably fewer resources in schools for black pupils relative to those serving

[32] The OECD (2013: 107) calculates the index of social inclusion as '100*(1-rho), where rho stands for the intra-class correlation of socio-economic status, i.e. the between-school variation in the PISA index of social, economic and cultural status of students, divided by the sum of the between-school variation in students' socio-economic status and the within-school variation in students' socio-economic status'.

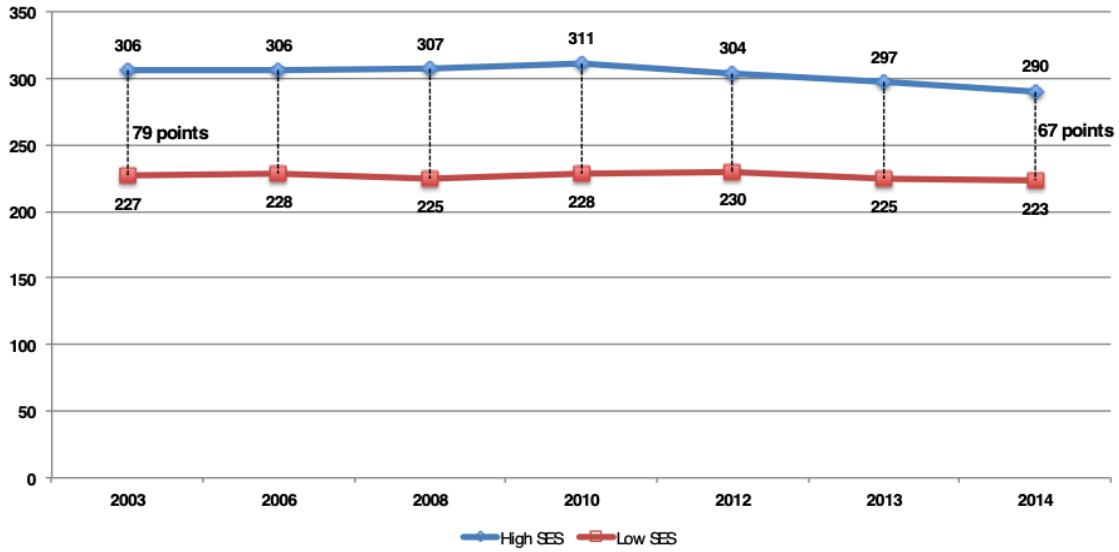
white communities (Reardon and Owens, 2014). This case clearly exemplifies the manner in which social and racial segregation sustains and worsens inequality of resources and learning outcomes.

This evidence confirms the existence of relevant link between social segregation and educational inequality. In fact, according to the OECD (2013:59), 'increasing social inclusion in a school system – thus reducing socio-economic segregation – has been suggested as the most effective policy to improve equity in both the short and long term, far more effective than creating magnet schools or offering school choice'.

The link between socio-economic background of the family and academic performance of students is strong in Chile. In fact, according to OECD (2013), Chile presents the third highest levels of correlation between socio-economic background and academic performance in Maths among 63 OECD and non-OECD countries participating in PISA 2012. Whilst in Chile, 23.1% of the total performance variance is explained by the socio-economic status of students, this percentage is below 15% in the average OECD country.

Moreover, academic performance gaps have remained at high levels in the last decade. Figure 3 presents academic performance gaps by socio-economic status (SES) of students for 10^{th} grade reading SIMCE assessments. In this case, although gaps have decreased from 79 points in 2003 to 67 points in 2014 (i.e. a 12-point reduction in total), it is mainly due to a reduction of 16 points in the academic performance of high SES and not to market forces improving performance at the bottom.

Figure 3. Academic Performance Gap by Socio-Economic Status (SES) SIMCE reading test scores, 10th grade



Source: Author's elaboration based on SIMCE (2014).

These performance gaps reveal the lack of fairness and low degree of equality of opportunities prevalent in the Chilean education system. Based on John Roemer's (1998) conceptual framework, Gamboa and Walternberg (2011) examine the degree of inequality of opportunity in six Latin American countries, using 2006 and 2009 PISA results to deconstruct the sources of variations associated with distinct degrees of effort (controlled by individuals)[33] and circumstances (beyond individuals' control). Inequality of opportunity occurs when individuals making the same degree of effort obtain different outcomes, due to their distinct circumstances. When only parental education is used as a circumstance of students, Chile presents the highest level of inequality of opportunity among all six countries in all disciplines (Maths, Science and Literacy).

In conclusion, although any serious holistic evaluation of the Chilean education system is methodologically complex and requires information which is not always available, it seems fair at least to claim – based on the presented national and international evidence – that the voucher system in Chile has not delivered the expected improvements. Indeed, not only has it failed to improve average academic performance, it has also promoted social segregation and prolonged

[33] Conditional degrees of effort differ from absolute levels of effort. Degrees of effort refer to the relative level of effort made by individuals in relation to their group of reference (i.e. those sharing similar circumstances). Individuals from different reference groups should only be compared in terms of their relative efforts.

educational inequality among different socio-economic groups. As a result, the Chilean society has seen a materialisation of the foreseen risks of markets of education, yet did not seem to reap the promised rewards of such a policy.

The fact that the Chilean voucher system has not delivered the expected effects could be caused by several factors, including, *inter alia*, inadequate funding levels and structure, and poor regulatory and accountability frameworks. As a result, a thorough evaluation should review these multiple aspects. However, since this type of system relies predominantly in competition between schools as the main driver for continuous education improvement, the lack of substantive progress observed in this dimension suggests that it would be reasonable to begin our evaluation of the Chilean voucher system by examining this crucial assumption, i.e. if competition between schools raises academic outcomes of students. This is the task we empirically address in the following sections.

4. Is competition between schools an important driver of education quality improvement? New empirical evidence for an old question.[34]

The previous sections examined the Chilean education system in relation to average academic performance, social inclusion and equality of learning opportunities. This section focuses in academic performance, in general, and explores more in detail the effect of competition between schools over education quality. We focus in this particular question as it is at the heart of the voucher model, thus understanding this phenomenon is crucial to properly evaluate its potential long-run benefits.

4.1. Competition for education improvement: general models

The main hypothesis behind the introduction of the voucher systems is that it would generate competition between schools, incentivising public and private providers to increase their effort levels in order to deliver higher levels of quality education. There are several ways of formalising this hypothesis (e.g. Manski, 1992; Hoxby, 1994; Filmer and Pritchett, 1999).

[34] The empirical strategy and conceptual discussion of this section is partly based on González (2004), which was presented as my master´s dissertation at PUC. This section however draws on broader evidence, and a new and larger dataset to better address the objective of this chapter.

Manski (1992) proposes a model wherein public schools maximise rents. These rents are defined as the difference between the total education expenditure and the expenditure devoted to inputs that are actually valued by families and that contribute to education outcomes, as opposed to the ones valued by public schools. This situation differs from privately run schools, which operate efficiently and devote their resources to maximise education outcomes. As competition rises, public schools internally reallocate their resources to avoid losing a large number of students; reducing their rents in order to increase their expenditure in those areas that raise the quality of education and are valued by students and families. A variant of this type of approach is proposed in Filmer and Pritchett (1999).

Hoxby (1994) proposes a Tiebout-type model of local public good provision that equilibrates local tax rates, house prices and quality of education provision. In combination with a principal-agent model, Hoxby (1994) argues that parents (principal) have difficulties in evaluating the level of productivity of public schools (agents), thus the presence of competitive private schools releases information which is useful to parents to enforce greater levels of productivity (either directly over inefficient public providers or indirectly by moving into a private school).

In contrast to the above, some scholars highlight the negative effect of competition in education and thus the adverse effects of a voucher system as the one implemented in Chile (Atria, 2012; Bellei, 2015; OECD, 2013). They stress that competition mainly generates a rearrangement of students between private and public schools, without substantial educational gain. In the Chilean context, since private subsidised (PS) schools can select their students and public municipal (MUN) cannot, student sorting is bound to happen. PS schools effectively skim the cream from the educational system, selecting the best students in a given geographical area. MUN schools, meanwhile, are left with the less advantaged students. Therefore, according to this account, the better results of PS schools is caused by the sorting of students, not by greater efficiency or quality improvement. Indeed, if there is sorting and no peer effect, the superiority of the PS schools would be achieved at the cost of worsening MUN schools, but the overall performance of the system would not be changed (zero-sum game).

In the presence of peer effect, sorting could generate further effects over outcomes. If there is peer effect, i.e. a positive externality caused by good students (or those with higher levels of cultural capital) over worse performing students (or those with lower levels of cultural capital), sorting would lead to a net social loss, since poorer and/or less able students are prevented from interacting with more advantaged or skilled students. Theoretically, if there was also a negative externality, equivalent in size, of bad students over good ones, sorting could have an overall ambiguous result. Nevertheless, the latter situation does not seem to occur in reality (Zimmer and Toma, 2000).

4.2. Evidence from a comparative perspective

There are several studies examining the impact of competition in educational outcomes. Evidence tends to be mostly inconclusive. Belfield and Levin (2002) make one of the most extensive reviews, examining a large number of studies in the US done between 1972 and 2002. They find that, in approximately half of the studies and specifications, there are no statistically significant effects of competition over academic performance of students. In over one-third of studies, although this effect is positive and statistically significant, it tends to be 'substantially modest', i.e. an increase in one standard deviation in competition proxies (Herfindahl index and private school enrolment) raises students' results by 0.1 or less standard deviations (e.g. Borland and Howson, 1993; Marlow, 2000; Hoxby, 2000; Hanushek and Rivkin, 2001). Finally in over 10% of studies and specifications the result is negative and statistically significant, although also usually small (e.g. Smith and Meier, 1995; McMillan, 1999; Maranto, Milliman and Stevens, 2000).

The evidence for the Chilean case is also inconclusive. While some studies find a positive impact of competition on educational outcomes (Gallego, 2002), others report mixed results (McEwan and Carnoy, 1999) or no effect on average but negative impact on public schools (Hsieh and Urquiola, 2002).

McEwan and Carnoy (1999), using panel data, find ambiguous effects of competition over student achievement: in some cases negative or null, and whilst others demonstrate positive effects. The existence of negative effects is later confirmed in Hsieh and Urquiola (2002). However, these studies may be criticised on methodological grounds. Most importantly, both studies estimate regressions without paying proper attention to endogeneity problems that could arise when using

the competition proxy variable (private enrolment as a percentage of total enrolment). These problems could arise because a greater presence of private schools would precisely occur in those places where the public performance is initially low. Therefore, estimates downplay the effect of competition.

This problem is addressed in Gallego (2002), using instrumental variables. The results confirm both those of Hoxby (1994) and those expected by neoclassical economic theory: schools operating in areas with higher levels of competition have better results. This effect is greater for PS schools than for MUN schools. This differentiated effect could be due to the different incentive framework each type of school faces.

Although Gallego (2002) solves the endogeneity problem, this study has other limitations. When analysing the effect of competition in each type of school, the author estimated separate regressions (truncating the sample). However, no adjustments to solve selection biases are carried out, thus the resulting estimates are biased. Finally, this study examines the effect of competition over a limited timeframe of 4 years, which could be insufficient to fully capture the effect of this phenomenon on a child's education over his life course, considering also the time needed for schools to adjust to new market conditions.

In addition, all three previously mentioned studies, when measuring the degree of competition of a municipality (pertinent local geographical area), use limited types of variables such as the percentage of private enrolment in each municipality or Herfindahl index. Although these competition proxies are useful and widely used in the literature, they provide a static 'picture' of the market structure in a given time without detecting its internal changes and evolution (entry and exit of firms). On the one hand, market concentration indicators weight public and private market participation in the same manner. Nevertheless, it would be reasonable to expect that a low Herfindhal index resulting from a high fragmented presence of public schools, not necessarily reflects a high level of competition in the market. Similarly, private enrolment does not provide enough information regarding the structure or level of contestability in a given market.

Taking into account the shortcomings of previous studies, this study moves beyond them in the following aspects: (1) use of a new indicator to reveal the level of contestability of the market (turnover of schools); (2) use of instrumental variables (IV) to control for endogeneity problems; (3) it econometrically addresses the presence of selection biases; (4) consideration of a longer time-frame (7 years) to properly capture the effects of competition.

4.3. Contestability of Markets: concepts and turnover indicator

A firm's market power is determined by the contestability of the market in which it operates and not by its concentration. A perfectly contestable market is 'one into which entry is absolutely free, and exit absolutely costless' (Baumol, 1982:3). The basic intuition behind this concept is that, regardless of the market structure, if there is free entry and costless exit of firms, incumbent firms will have to behave competitively due to the threat of potential competitors outside the market.

The degree of contestability of the market will depend, to a large extent, on the relationship between the monopolist's price response lags and the proportion of sunk costs. In perfectly contestable markets, there is no delay in the entry of new competitors, but there is a time lag in price adjustments. This means that the monopolist takes time to adjust prices, making a 'hit and run' strategy feasible for potential competitors. Additionally, in perfectly contestable markets, there are no sunk costs (all costs will be recoverable) – thus, they cannot raise entry and exit barriers.

For the purpose of this study, a contestable market would exist if schools operating in a community with a reduced number of schools were not able to lower their quality of the education because, by doing so, they would be threatened by new potential schools wanting to enter into the community in order to take over part of the enrolment.

A widely used indicator to measure the competitiveness of a market is the turnover of firms. This reflects the dynamism within a given market. In this sense, this indicator is properly aligned with the theory of contestable markets. That is, it does not attempt to reflect the structure of a market, as the Herfindahl index does, but rather its evolution and degree of exposure to the threat of entry of new firms.

When the turnover of firms is high, it suggests that barriers to entry and/or exit are low, and thus that the incumbent firms are continuously threatened by potential new entrants. Consequently, a high turnover reflects a high contestability. However, caution must be taken when analysing the meaning of a low turnover, as this could mean two different things: on the one hand, it may reflect the existence of barriers that inhibit entry of new firms and the exit of those most inefficient; on the other, it could mean that the market is perfectly contestable and, therefore, that the competitive behaviour of incumbent firms discourages the entry of new enterprises. In this case, the low turnover does not reflect a lack of competitiveness, but the opposite. While this weakness does not eliminate its advantages over other alternative indicators (such as the Herfindahl index), these caveats must be kept in mind.

4.4. Methodology: Econometric Strategy

In order to address whether the degree of market competition affects educational outcomes of students, and isolate the type of schools that are most affected by competition, we proceed as follows: we estimate two regressions, according to Equation I, below. We estimate a regression for each type of school (PS and MUN schools), in order to separately estimate the effect of competition on the academic performance of students. Thus, we do not assume the same technology in both types of establishments. Additionally, in order to correct for selection bias a selection equation is estimated. Finally, instrumental variables are used to include the variable 'competition' (turnover) in the main model, as direct inclusion could lead to endogeneity problems.

With regards to the main model, based on Hoxby (1994), the following regression is estimated:

$$(I) \qquad Yij = \beta 1\, Cj + \beta 2\, Xj + \beta 3\, Xij + Wj + Vj + eij$$

where i indexes individuals; j indexes the school market; Y is the educational result; C is the variable (endogenous) that represents the degree of competition; Xj is the exogenous vector of variables relating to the educational market; Xij is the exogenous vector of variables relating to the student; Wj is the unexplained quality of the school; Vj is the term for specific error for that market, and eij is the term for specific error for that student.

Additionally, based on Hoxby (1994), the reduced equation of the variable competition (in this case, turnover and percentage of private enrolment) is as follows:

$$(II) \qquad Cj = \alpha 1\, Rj + \alpha 2\, Xj + \alpha 3\, Wj + Sj$$

where Rj is a vector that describes the features of the population within market j, Xj is a vector of exogenous variables that describe the educational market, Wj is the unexplained quality of the school and Sj is the term for specific error for that market. Based on this equation, we may ascertain that the degree of competition observed in the market will depend, to some extent, on the quality of schools that initially operates in it. This endogeneity would result in a bias of the estimators by OLS of β1. Therefore, the instrumental variable method is used in order to obtain a correct estimate of β1. To this end, a set of instruments Rj is identified. To obtain consistent estimates, the Rj must relate to Cj, but not with the Yi errors. In this manner, this exogenous component of competition will not introduce endogeneity problems in the estimates of the β1 parameter.
Additionally, the problem of selection bias results from the fact that students are not distributed at random among the different types of institutions. This 'selection' has two sources: on the supply side, PS schools are allowed to use and do use selection methods to applicants that wish to be admitted as regular students, while MUN schools are not allowed to use such practices, unless they are operating at maximum capacity (Rounds, 1994); on the demand side, there is a self-selection of students, since the decision of entering a PS schools is strongly linked to the applicant's household characteristics.

For this reason, it is not possible to analyse the performance of each type of school separately (without making the required corrections), since by doing so the sample used would be truncated: we only observe the performance of the students, in each type of school, that have already chosen to enrol in that school. In this manner, the estimate by OLS shows inconsistent estimators, since a specification error is being made due to the omission of a relevant variable[35]. In turn, if the estimate is obtained by using OLS over X (explanatory variables) and λ, the problem is corrected, obtaining consistent estimators (Green, 1999).

[35] As explained in Green (1999), the omitted variable in this case is λ, the inverse Mills ratio.

Finally, the procedure proposed in Heckman (1979) is used. This two-stage estimate consists, initially, in estimating the probit equation so as to estimate the inverse Mills (λ) ratio; subsequently, the main regression is run by OLS, including this ratio as regressor, obtaining unbiased and consistent estimators.

4.5. Data

The models are estimated using information provided by the Sistema Nacional de Evaluación de la Calidad de la Educación (SIMCE). Both Language and Maths tests scores are used at the student level for 4th graders for the period 2002-2008. The SIMCE dataset containing Parents' Survey for SIMCE 2008 (4^{th} grade) is also used. This dataset provides information regarding the education level of both parents and the per capita income of each student's household.

In addition, the Directory of Schools 2002-2008 is used, together with the enrolment dataset for years 2004-2008. These datasets combined allow calculating the proxy indicator for competition (turnover of schools).

In order to calculate our indicator of competition, we define each municipality (smallest local administrative unit in the Chile) as the relevant market. This is done under the assumption that the inter-municipality mobility of students is small, which seems realistic (especially for 4th graders). That is, parents choose schools near their homes. Therefore, schools outside the municipal territorial limit would not be considered by parents, nor would they be considered a threat to schools within the district.

Although this study focuses on charter schools, it also includes the private independent (PI) schools when defining the relevant competition. The reason for this is that, while competition from MUN schools is given mainly by the PS schools, the PS schools' competition consists of both the MUN and PI schools – competition which, in turn, affects MUN schools.

The turnover indicator for a given year is calculated as the sum of schools that enter and exit a municipality in a year divided by the total number of schools at the beginning of that year. For the purpose of this study, a period of 7 years (2002-2008) is considered. This period covers all 4

elementary school years for which 4th graders attended school, plus a period of 3 years prior to their school entry, considered a period enough for schools to adjust to higher or lower market competitive conditions. On the other hand, the private enrolment indicator is calculated as the total enrolment in PS and PI schools, divided by the total enrolment in each municipality.

4.6. Results

The results provide new evidence that builds upon previous research. We estimate OLS regressions correcting for endogeneity, using instrumental variables, and selection bias, using the procedures described in previous sections.

4.6.1. Estimation of competition variable using I.V.

We begin the analysis with a first stage OLS to estimate the competition variables: turnover. The detailed results of the estimates are presented in Appendix 1.

A general assumption behind most of the instruments used is that parents choose the municipality/district in which to live, regardless of the educational characteristics prevailing in it.

A first instrument used is the total enrolment ('alumnos' variable) of each district. In global terms, it represents the size of the market. Larger districts should increase the attractiveness of the municipality for potential private schools. As a result, the competition indicator should be expected to be larger in larger districts. In turn, given the initial assumption above, it is expected that total enrolment in districts is not directly related to students' performance.

An index of the percentage of enrolment that is located in urban areas is also used ('urbanidad' variable). The greater the proportion of enrolment in urban areas, the higher the competitiveness of the district. Since rural population is spatially dispersed, local monopolies could emerge due to the captive demand that would be generated as a result of high travel costs (distances). This instrument could be weaker if there is a high mobility of students within districts. However, according to parent surveys approximately half of parents attending MUN schools declared that the proximity of the school to their homes was a key factor in choosing their school (Gauri, 1994). This should be especially the case for children in 4th grade.

Finally, regional fixed effects are included. They relate to competition depending on the specific characteristics of each region. It seems reasonable to assume the absence of a direct relationship between these fixed effects and academic performance of students (not attributable to different levels of competition).

Overall, these instruments explain (Adjusted R-squared) 30.5% of the variance of school turnover in each district. In addition, the overall and individual variables are statistically significant and have the expected signs.

4.6.2. Estimated Effect of Competition by type of School

The two-stage estimations (2SLS) of the overall models are presented in Table 2, correcting for selection bias and introducing the competition variable estimated through instrumental variables (I.V.). Detailed estimates for each regression, by type of school and SIMCE test score are presented in Appendix 1.

In these models the dependent variable is the SIMCE test score obtained by each student in language and math (4^{th} grade, 2008). The explanatory variables include household income (per capita), years of education of the father, years of education of the mother, gender, geographical area (urban/rural) and the competition variable, estimated using I.V. On the other hand, the selection equation includes: household income (per capita), years of education of the father and mother, gender of the student, the degree of school urbanisation of the district and the percentage of enrolment in PS schools over total subsidised enrolment (PS plus MUN) in each municipality. The last two variables are intended to reflect the availability of PS schools in the district.

Both household income (per capita) and schooling of the parents are included in logarithm. This specification is consistent with the results obtained in Mizala and Romaguera (2000), where the existence of 'diminishing marginal productivity' of factors linked to students' socio-economic background is observed.

As presented in Appendix 1, the models are statistically significant in global terms. Furthermore, the individual variables included in the model are statistically significant and have the expected

signs (except for the competition variables, which are discussed below). Additionally, the coefficient for the lambda variable is positive and significant for PS schools and negative and significant for MUN schools, indicating that there is indeed selection bias. Therefore, the importance of taking this issue into account, when estimating these models, is confirmed.

Table 2 presents a summary of the estimated coefficients of the effect of competition, measured in terms of turnover of schools, over SIMCE results in Language and Maths. All coefficients are negative and statistically significant (p-value < 0.01), except for Maths scores in MUN schools. Although coefficients are negative, they are modest in terms of standard deviations. That is, an increase in one standard deviation of the turnover index decreases SIMCE test scores in less than 0.1 standard deviations in all cases.

Table. 2 Effect of competition over SIMCE scores: Turnover

Type of School	SIMCE test	Estimated Effect **β**	Effect in S.D of SIMCE
Private Subsidised	**Language**	**-31.46****	**0.037 s.d.**
Private Subsidised	**Maths**	**- 23.94****	**0.028 s.d.**
Municipal	**Language**	**-58.62****	**0.069 s.d.**
Municipal	**Maths**	**- 6.42**	**.**

** = p-value < 0.01. Details are presented in Annex 1.

As a consequence, the presented estimations show that the effects of competition over academic outcomes, for both indicators of competition, are statistically negative and very small in practice. The importance of these results resides in the fact that they have been obtained using a long period of observation (2002-2008), adjusting for endogeinity and selection bias problems, using a novel indicator of competition. Additionally, these results are consistent for two different disciplines: Maths and Language. Moreover, they have been obtained using separate regressions for PS and MUN schools. In doing so, our results confirm that on the margin, MUN schools are potentially more harmed by competition than PS schools, probably as a result of a combination of two

phenomena: (1) higher prevalence of student selection practices in PS, which promotes sorting and a relatively higher concentration of disadvantaged students in MUN schools, and thus reduces positive peer effects; and (2) lower capacity of MUN schools to react to competitive pressures, which in some cases produces the decline of their enrolment and thus the reduction of their total funding, below the optimum. Moreover, the results show a negative effect of competition on all schools (PS and MUN). This is probably explained by the fact that competition limits the possibility of constructive collaboration between schools, principals and teachers, des-incentivizing actors to share effective pedagogical practices among them.

Although the statistically significant negative effects of competition over outcomes may seem surprising to voucher proponents, they are not so. These results are partly in line with previous studies carried out in the United States (Smith and Meier, 1995; McMillan, 1999; Maranto, Milliman and Stevens, 2000) and in Chile (McEwan and Carnoy, 1999; Hsieh and Urquiola, 2002) and would raise again the question about the potential negative effects of competition over education outcomes. From an international comparative perspective, more than 10% of studies reviewed in Belfield and Levin (2002) find similar negative statistical significant effects. Moreover, as these scholars argue, the proportion of studies showing negative results could be seriously underreported due to several common biases. In fact, as Belfield and Levin (2002) argue 'publication bias is of particular concern in areas of inquiry where there are a large number of small-sample studies, where fewer randomised trials are conducted, and where research is ideologically motivated'. Some studies are more likely to be published than others due to the obtained results (Shadish and Haddock, 1994). Moreover, some specifications could be chosen over others just because they render the desired results (Begg, 1994).

Despite the above, these results must be taken with caution, since the effect is statistically significant but extremely modest in magnitude, especially in terms of policy implications. When these results are combined with the large accumulated knowledge in the field, the reasonable conclusion would be that the effects of competition tend to converge around zero.

In regards to the general evidence accumulated in this area of research, it seems reasonable to argue that competition has not been a driver of education quality improvement since, as this study

and others have shown, the magnitude of the effect is null or modest at best, regardless of the direction of its impact (positive or negative, depending on the study). In the next section we discuss possible reasons behind this phenomenon.

5. Why competition fails to be a driver for improvement of education quality

Most theories and models promoting the importance of competition in education systems are based upon a series of assumptions regarding the manner in which those markets are supposed to work. In this section, we explore the degree to which some of these assumptions are fulfilled in reality. If these assumptions were *not* ultimately satisfied in reality, the assumption that competition constituted a driver for improvement could be brought into question.

General assumption 1: parents have adequate levels of information about schools.

A key assumption of well-functioning free markets is the existence of perfect information. Both consumers and producers are assumed to have adequate levels of information. In reality, however, this assumption proves to be inadequate when it comes to education. Because of education's complex nature, parents face important asymmetries of information regarding the quality of the 'service' they are acquiring for their children. Since education cannot be tested ex-ante, parents will only be able to confirm the quality of education a given school is providing many years after their children have entered the labour market and incorporated into social and political life.

Neoclassical models assume that parents have information about the quality of education provided by each competing school, usually in the form of 'academic test scores'. Nevertheless, reality shows a different picture. A close examination of SIMCE's parents' survey show that most parents don't know the SIMCE test score of the school in which they enrolled their children. For example, in 2001 only 21% of parents declared knowing their schools' SIMCE results (OECD, 2004).[36] In other words, 4 out of every 5 parents did not know the academic performance of their school. The level of information also varied by socio-economic group, in accordance with other international studies (Schneider et al. 2000). While only 12% of parents from the low socio-economic status group declared knowing the SIMCE test scores of their school, this percentage reached 48% in the

[36] SIMCE 2001, 10th grade.

case of the high socio-economic groups (OECD, 2004). These figures are disappointing – especially considering that SIMCE results have been public since 1995, and are widely disseminated through parental and school reports, government websites and general media.

General assumption 2: parents choose schools with higher academic performance. Neoclassical models assume that parents will compare schools and choose those with the highest academic scores. Yet, in the Chilean case, only 17% of parents declare that SIMCE results influenced their school choice (OECD, 2004).

Moreover, the evidence for Chile shows that geographical proximity seems to be among the most important factors influencing parental school choice (Elacqua & Fábrega, 2006). In other words, parents are not free mobile consumers searching for the 'best performing schools' – they seem to be part of a geographically captive demand.

General assumption 3: schools compete in terms of academic performance.
Advocates of markets in education anticipate an important improvement in academic quality as a result of an increase of innovation in pedagogical practices, curricular content, and organisation and administrative processes driven by parental choice and school competition (Chubb and Moe, 1990). However, international evidence shows a much-nuanced reality.

Firstly, innovation in schools seems to be low. Lubienski (2003:427-428) analysing 56 studies in the field concluded that:

> *There appears to be no direct causal relationship between bringing market mechanisms to education and inducing educational innovation. In fact, the very causal direction is in question in view of the fact that government intervention, rather than market forces, is the cause of the charters' most frequently acknowledged innovation: the policy innovation in school governance.*

Although this is an understudied topic in Chile, some researchers claim that innovation is low and insufficient (Bellei, 2015).

Secondly, rather than competing on the grounds of innovation, schools seem to compete using selection practices to improve the pool of students they serve. Selection is done in several ways, including economic (fees), social (interviews with parents) and academic instruments (entrance exams). Table 3 shows selection practices used by public, private subsidised and private independent schools in Chile. It confirms that private schools make an intensive use of selection practices. For example, while only 8.5% of students in public schools were asked to take an entrance exam, this percentage reached 45% and 58.8% in private subsidised and private independent schools, respectively.

Finally, ex-post selection is done through the expulsion of low-performing students. Bellei (2005) finds that private schools expel low-performing students more frequently than public schools.

Table 3. Selection practices by school type

	School type		
	Public	**Private subsidised**	**Private**
Certificate of baptism or religious marriage	**0.6%**	**13.7%**	**31.1%**
Interview with parents	**16.8%**	**40.3%**	**79.8%**
Entrance exam	**8.5%**	**45.0%**	**58.8%**

Source: Verger et al. (2014) in GIESCR (2014).

This phenomenon should be a matter of concern. Empirical evidence shows that non-selectiveness improves the average academic performance of educational systems in general, but also of below average children in particular (Glennerster and Low, 1990).

General assumption 4: private subsidised schools are better performers than public schools. Reviewing a vast number of studies on school choice, Berends (2015:168) concludes that 'the evidence base is weak for scaling up charter schools'. In Chile, many studies have attempted to examine the relative performance of private and public schools. Although the evidence is not conclusive, it shows that outcome differences between private subsidised and public schools are either null or statistically positive, but trivial in public policy terms. In fact, while Sapelli and Vial (2002) find that private providers over perform public schools, Bravo et al. (1999) gets mixed results (positive, null and negative) and Mizala and Romaguera (2000) find no outcome differences

once proper controls are made. Moreover, Mizala et al. (2005) argue that public schools do a better job with students from low-socio-economic status groups. As a result, it is not clear that private providers (the main protagonists in a market model) will be able to promote substantive improvements in quality of education.

General assumption 5: competition may be a relevant driving force for the education system as a whole.

Although competition may develop in urban areas, it tends to be low or non-existent in rural areas (Gonzalez, 2004). Where students are geographically dispersed and small in number, it is most likely that no private investor will be willing to establish a school. In approximately 25% of Chilean municipalities, there are no private providers due to the small number of students (McEwan and Carnoy, 2000). As a result, competition cannot be relied upon as a uniform force for improvement throughout the system.

6. Conclusions and Policy Implications

Chile implemented a voucher system more than three decades ago. Although this system may have had benefits in raising enrolment and expanding access in its first stages, its track record in terms of quality of education improvement seems to be questionable.

The basic assumption of markets of education is that competition between schools will constitute the main driving force behind education improvement. Nevertheless, international and national evidence are inconclusive in this regard. In this context, this paper provides new evidence showing that the effects of competition on academic outcomes have been rather negative, although negligible in size.

This conclusion has several policy implications. Firstly, the Chilean education system should no longer rely on market forces in general, or competition in particular, for academic improvement. The government should put in place accountability measures and support systems to monitor and encourage quality improvements in schools. Secondly, it should limit selection practices that allow

cream-skimming and/or discrimination against students[37]. In doing so, it will promote a greater diversity of students within school communities, enhancing learning and school life. Improving quality through sorting would cease to be an option. Thirdly, it should gradually eliminate cost sharing schemes, which promote an economic stratification and social reproduction of inequalities. Fourthly, since in some cases competition seems to be harmful, the state should explore ways of promoting cooperation (instead of merely competition) between schools. In fact, instead of competition, it is rather cooperation networks among schools that seem to be a crucial factor behind quality improvement (Muijs, 2010). Comparative evidence shows that, when these networks exist, schools help each other to improve (Hill and Matthews, 2010). Together, they are able to discuss a wide array of relevant topics, evaluate each other in order to identify weaknesses, and – most importantly – they share resources, experiences and strategies leading to quality improvement. Muijs (2010) argues that, among different strategies promoting school effectiveness and improvement, cooperation between schools seems to be the most promising.

Indeed, competition could be harmful when it prevents schools from benefiting from cooperation among peers and isolates underperforming schools until they are finally shutdown. It is in fact generally assumed that the *creative destruction* of schools in a competitive market will enhance quality of education for all students in a community. Yet this assumption ignores the fact that, when low-performing schools start losing part of their enrolment, they experience a slow reduction of their financial resources that could induce a process of slow deterioration. Meanwhile, the students in those schools receive an education of decreasing quality, and are negatively affected for life. The period of time between the initial decline of a school and its actual shutting down could be too long to tolerate from a normative perspective.

[37] During the writing of this thesis this situation has positively changed with the enactment in 2015 of the Education Inclusion Law, which bans student selection, gradually eliminates subsidised schools` cost sharing schemes, and for-profit institutions. However, the actual implementation of the law is still to be seen, as in 2019 the current government has sent a bill to revert this policy.

Paper 3

Inequality and its effect over social mobility via divergent perceived rates of return to higher education: Evidence from Chile[38]

1. Introduction

There is an increasing body of comparative evidence suggesting that countries with higher levels of income inequality tend to have lower social mobility, measured in terms of intergenerational earnings elasticity (Corak, 2013). This finding is especially relevant in current days, as income distribution has deteriorated in most countries around the world (UNDP, 2013). In this context, researchers have investigated several mechanisms through which intergenerational transmission of advantage occurs (Solon, 1999; Bjorklund and Jantti, 2009). While some have examined the role of family on the transmission of non-cognitive skills (Bladen et al., 2007), health (Eriksson et al., 2005), educational attainment (Bowles and Gintis, 2002) and labour market networks (Corak and Piraino, 2010), others have focused on the impact of educational policies (Meghir and Palme, 2005; Mayer and Lopoo, 2008).

Within the realm of studies focusing on the effect of inequality over educational attainment, mainstream economic theories have highlighted the importance of tackling short-term 'credit constraints', which preclude talented individuals from making optimum levels of human capital investments and move along the social structure (Becker and Tomes, 1979 and 1986). Based on this perspective, a growing number of states around the world has started to limit its role in higher education to designing and implementing student loan schemes, increasingly withdrawing its direct funding to higher education institutions (OECD, 2008a; OECD, 2008b).

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[38] This research was partly funded by the University of Cambridge. This paper is a revised, expanded and new version of the research presented for my MPhil in Development Studies dissertation at the University of Cambridge (2010-2011).

The rationale behind these policies lay in the human capital theory (Schultz, 1961; Becker, 1964; Mincer, 1974). This theory predicts that the type and levels of investment in education chosen by individuals depend on its expected returns[39]. Thus, the implementation of student loan schemes is based on the assumption that since actual economic rates of return to higher education are significant (Psacharopoulos and Patrinos, 2004), students will rationally decide to participate in postsecondary education if credit constraints are eliminated. As long as the internal rate of return of educational investments exceeds the interest rates of student loans, individuals should choose to enroll in tertiary education.

Some argue, however, that the human capital theory is inadequate to explain how real student choices are made, because it ignores the role of identity and processes of preference formation (Akerlof and Kranton, 2010). Others, while accepting the validity of the human capital approach, find that students from low socio-economic backgrounds tend to expect lower returns to higher education than their peers (Usher, 2006). In some cases this pessimistic view corresponds to reality (Menon et al., 2012); in others, it is simply an underestimation of actual realised returns in the labour market (Betts, 1996). In this context, the implementation of indiscriminate student loan schemes could have negative effects on the higher education participation rate of low socio-economic background students, limiting their educational attainment and reducing social mobility.

Located in this theoretical, empirical and policy debate, this article focuses on the subjective perception of returns to higher education among students from different socio-economic backgrounds. It provides evidence exposing the weaknesses of the human capital theory and its deriving policy prescriptions. For this purpose, in section 2, we briefly discuss the theoretical limitations of the human capital theory. Most importantly, we criticize its insufficient attention to preference formation and non-economic factors that affect education decisions. In section 3, the existing comparative evidence of actual and ex-ante perceived rates of return to higher education is examined. Engaging with the latter literature, section 4 provides new and rich evidence of perceived returns in Chile. Special consideration is given to socio-economic background

[39] Although in its original formulation, Becker (1964) explicitly clarifies that returns to education should be understood in a broad sense, including both economic and non-economic net benefits, in practice only the former sphere usually tends to be considered.

differences in expectations. Finally, preliminary underlying causes are explored and relevant policy implications are discussed.

2. Theoretical discussion: Exploring the limitations to the human capital approach.

It is possible to distinguish several bodies of literature that identify important limitations to the human capital approach and its policy implications. The most radical critique comes from social reproduction theories and heterodox economics. This perspective rejects the assertion that students' educational decisions can be explained in terms of 'rational choices' or that they respond to a 'utility maximisation process'. Although Bourdieu (1990) does not deny a space to agency in explaining behaviour, it emphasises the importance of social structure and its role in preference formation. In Bourdieu's (1990: 130) own words, 'the disposition of agents, their habitus, i.e. the mental structures through which they apprehend the social world, are essentially the product of the internalization of that world'. As a result, students' participation in higher education should be seen more as a consequence of social and cultural reproduction than rational calculations. The fact that students from higher socio-economic backgrounds tend to enrol more in higher education reveals their comparative advantage to better identify opportunities and benefit from institutional settings that are compatible with their cultural capital. This approach may parallel Keynes (1936) understanding of the factors that determine human behavior in contexts of uncertainty, which instead of being based on pure rationality, were guided by psychological propensities, animal spirits and conventions.

A second body of literature, located in economics, accepts both 'rational choice' and 'utility maximization' assumptions as valid. Nevertheless, it criticises the human capital approach on the basis of its disproportionate emphasis on economic returns to education as the key determinant of choice. This economic focus tends to overlook the importance of preferences and non-economic variables that also affect the utility function and thus individual behaviour. In fact, Heckman et al. (2006:443) argue that 'psychic costs or distaste for schooling may explain why more than fifteen percent of new cohorts of American youth do not receive a high school degree despite its high

estimated financial return'[40]. They recommend focusing more attention on *utility* maximisation processes, as opposed to those merely centered on *income* maximisation.

Similarly, in their pioneering work in the field of economics of identity, Akerlof and Kranton (2010) highlight the importance of preference formation and identity in explaining human behaviour: 'the incorporation of identity and norms yields a theory of decision-making where social context matters' (Akerlof and Kranton, 2010:6). They argue that it would be inadequate to assume that preferences are exogenously determined and independent from social context, as neoclassical and human capital models do. On the contrary, preferences seem to be strongly influenced by social norms, which act through processes of socialisation. As a consequence, 'what people care about, and how much they care about it, depends in part on their identity' (Akerlof and Kranton, 2010:10). This explains why some juveniles, despite observed significant private returns, tend to avoid participating in post-secondary education. Although this could partially resemble some aspects of Bourdieu´s theory (endogeneity of preferences), it differs as Akerlof and Kranton´s perspective is fully embedded in a neoclassical approach, where individuals maximise a traditional neoclassical utility function which includes an identity component.

An alternative view and critique to the neoclassical perfect rationality assumption was proposed by Simon Herbert, through the concept of bounded rationality. This concept relies in the fact that individuals encounter three main limitations during their decision making process: (1) limited and inadequate information; (2) limited mental/cognitive capacity to process and evaluate information; and (3) limited time span to make decisions. As a result, bounded rational decision are based on "satisfising" rather than "maximising" criteria. In synthesis, Simon (1955: 99) proposed replacing perfect rationality for a more adequate assumption:

> *Broadly stated, the task is to replace the global rationality of economic man with the kind of rational behavior that is compatible with the access to information and the*

[40] Some researchers have gone even further. Bowles and Gintis (1975) argue that these differences in preferences are not random, but the result of an educational system shaped by the elite to reproduce social inequalities and labour-market stratification.

computational capacities that are actually possessed by organisms, including man, in the kinds of environments in which such organisms exist.

A last body of research is characterised by its general acceptance of the human capital approach in its reduced form, i.e. generally treating preferences as an exogenous variable and focusing mainly on the effect of economic returns on educational investment decisions, but criticising the fact that individuals do not really make human capital investment decisions based on *actual* returns, as most empirical studies assume, but on *perceived* returns.

As a consequence, within this last body of research, two sub-groups of studies can be identified: those estimating 'actual' returns to education as observed in the labour market; and those estimating 'perceived' returns to education.

In regards to the first sub-group of studies, much effort has been made to estimate the *actual* private rates of return to education in general and higher education in particular. In order to estimate the returns to education, three main methodologies have been used: the internal rate of return (full method)[41], considering all relevant costs and benefits of educational investment (Becker, 1964); the average earnings premia per additional year of schooling (Mincer, 1974); and the 'short-cut' method, which, although less used, allows calculation of the average return rate to education in a direct manner, merely using information about earnings for higher education and secondary graduates and the direct costs of higher education (Psacharopoulos, 1992). Although there are several methodological problems that research estimating return rates to education often ignores (Griliches, 1977), they have progressively been addressed in recent decades as a result of better data and novel econometric techniques (e.g. Heckman, 1979; Ashenfelter and Krueger, 1991; Card, 2000; Heckman et al., 2006).

The empirical use of these methods has rendered estimates confirming the existence of considerable levels of return to higher education, which vary across countries. Boarini and Strauss (2007) estimate internal rates of return to higher education for 21 OECD countries, finding an average 8.5 per cent return, within a range of just over 4 per cent in Spain and Italy, and over 14

[41] The internal rate of return is the rate of discount equating the present values of benefits and costs.

per cent in Ireland. Similarly, Psacharopoulos (1994) estimates world tertiary internal return rates of 20.3 per cent, OECD returns of 12.3 per cent and Latin American returns of 19.7 per cent. On the other hand, Psacharopoulos (1994) estimates world average Mincerian return rates to higher education of 10.1 per cent, OECD returns of 6.8 per cent and Latin American returns of 12.4 per cent. As a consequence of these results, this stream of studies concludes that in the absence of credit constraints, it would be reasonable to expect students to 'rationally' enroll in postsecondary education. This would seem to be especially true in low and middle-income countries, where private returns seem to be higher than in developed ones.

The second sub-group of studies focuses in the estimation of *perceived* or expected rates of return. It is argued that *perceived* returns are more relevant than *actual* returns realised in the labour market, since the former will be the ones actually informing students' decision-making process. In fact, evidence shows that there is an important correlation between *perceived* returns and participation rates or enrolment decision (Menon, 2008). In the next section we discuss this body of literature, synthesizing its main findings and limitations, especially in relation to its lack of attention to the effect of social inequalities over perceived returns, and the implications this has for social mobility and educational policy.

3. Comparative Evidence on Perceived Rates of Return: The need to go beyond averages.

There is a small but growing body of research focusing on students' expectations of future earnings and their comparison with actual incomes in the labour market. It is fair to state that although evidence is not conclusive, an important proportion of studies has found that students *on average* tend to have rather realistic expectations. Webbink and Hartog (2004), Varga (2002), Wolter (2000), Carvajal et al. (2000), Betts (1996), among others, find that income expectations of students tend to be, *on average*, quite accurate and similar to actual average graduate earnings

observed in the labour market[42]. Some researchers have taken these results as sufficient prove of the validity of the Human Capital approach.

Nevertheless, even if we accept the hypothesis that students are competent at forecasting future returns, this general result only holds for the *average* estimation, i.e. at an aggregate level. In fact, the variation in students' beliefs is significant at the individual level (Varga, 2002; Brunello et at., 2001; Betts, 1996; Dominitz and Manski, 1996). For instance, Dominitz and Manski (1996) find substantial heterogeneity among students' beliefs about the current distribution of labour market earnings. As a result, at the individual level, we usually observe a low level of correspondence between beliefs and reality[43]. Moreover, self-enhancement seems to be a common tendency among students from high-income families, which tend to overestimate future realised earnings (Webbink and Hartog, 2004).

In synthesis, evidence is still inconclusive. Despite an acceptable degree of *average accuracy* observed in many studies, a growing body of research also shows the presence of systematic estimation errors and, most importantly, the existence of a sizeable variance in individuals' estimates of national average returns[44]. This heterogeneity should cast doubt about the explicatory capacity of the human capital approach, when taken in its reduced form. If students are not individually able to accurately estimate returns to education, investment decisions may hardly be considered rational.

4. Weaknesses in current research

A common deficiency shared by most studies is this area is that they survey higher education undergraduates instead of secondary school students (e.g. Menon et al. 2012; Jerrim, 2011; Botelho and Pinto, 2004; Webbink and Hartog, 2004; Brunello et al. 2001; Carvajal et al., 2000; Betts, 1996; Smith and Powell, 1990; Blau and Ferber, 1991). Undergraduate students have already made

[42] Some studies have found different results. For example, Jerrim (2011) and Blau and Ferber (1991) found that college students tended to overestimate actual labour market incomes, while Menon et al. (2012) observed in both studies done in Cyprus that students tended to underestimate returns to higher education.
[43] An exception is observed in Webbink and Hartog (2004).
[44] This inaccuracy has been observed in terms of the individual incapacity to estimate the actual national average income of graduates (Betts, 1996), but also the actual distribution of incomes of graduates in the labour market (Dominitz and Manski, 1996).

their decision to enroll in higher education, so entail only a biased truncated subset of students. Additionally, since the time they enrolled in higher education, these students have probably received new information from professors, alumni, peers and other counseling staff in their colleges, which surely allows them to have a better panorama of current labour market conditions. In fact, evidence shows that college students experience a learning process about labour market conditions during their years in higher education (Brunello at al., 2001). Therefore, assessment of, for example, accuracy of estimated returns by senior college students renders little information about the expectations they had when they decided to invest in higher education. Thus, it seems of little use to test, confirm or reject human capital postulates.

Another weakness in most studies is that they tend to analyse the average capacity of students to estimate future earnings. However, only a smaller number of studies have paid special attention to the impact of the socio-economic background of students on their ability to accurately make these estimates (e.g. Webbink and Hartog, 2004; Carvajal et al. 2000; Betts, 1996). As a result, evidence in this area is scarce and inconclusive. This absence of robust evidence should be especially perturbing. Since poorer students tend to face higher credit constraints, their subjective estimates are especially important in determining their willingness to acquire student loans and participate in higher education. In fact, Betts (1996) finds that poorer students tend to make erroneous lower estimates of future earnings. When these estimates are compared to actual income data in the labour markets, it is possible to corroborate that these students make larger estimation errors than their peers. As a result, poorer students systematically underestimated the national average salary of graduates. Menon et al. (2012), on the other hand, also found that poorer students had lower expectations regarding their future earnings in the labour market, but these expectations were in line with the actual realised returns for this group. As a result, in Cyprus socially disadvantaged groups were found to accurately anticipate their future lower salaries.

A final limitation of the studies available in this area is that, with the exception of those conducted in Egypt (Psacharopoulos and Sanyal, 1982), Hong Kong (Wong, 1989) and the Philippines (Psacharopoulos and Sanyal, 1981), they have all been carried out either in Europe or North America. Only a few have been done in developing countries and, to the best of our knowledge, none in Latin America.

This study contributes new evidence to this area of research, while attempting to tackle some of the previously mentioned limitations. Firstly, it surveys high school students in relation to expected returns to higher education. These students are close to making actual higher education participation decisions. Thus expected returns should be especially accurate at this stage, if they are to behave as the human capital model predicts. Secondly, it examines in detail expectation disparities among students from different socio-economic backgrounds. Finally, it focuses on Chile, a high-income Latin-American country, providing valuable and novel evidence from this region. Moreover, this country is especially pertinent for the purposes of this study, due to its highly privatised educational system. Public provision and state funding are significantly low compared to OECD countries. Families and students must fund high levels of tuition fees, through a government implemented student loan system. Thus students are expected to be making well-informed rational choices regarding education investment decisions based on accurate anticipated rates of return to higher education.

5. Methodological Approach

5.1. Data collection and sample

A total of 508 students attending six secondary schools in Santiago, the capital city of Chile, were initially selected for the purpose of this study. Questionnaires specially designed for this study were applied to secondary students from 10^{th} – 12^{th} grades. All students belonging to each grade, in every selected school, were surveyed to avoid possible biases between classes of the same grade.

The sample of schools was stratified by school socio-economic background, according to the classification published by the Ministry of Education of Chile. This classification is constructed for each school, using four indicators: years of education of fathers and mothers, per capita household income, and a vulnerability index used by the Chilean government to target social programmes such as school meals and health services. Using these four indicators, schools are clustered into five different socio-economic status (SES) groups: low, middle-low, middle, middle-high, and high SES.

Following Patton (1990), schools were selected in order to maximise their differences in terms of SES (maximum variation sampling). Consequently, two schools from low, middle and high SES were selected. The resulting distribution of students by SES was as follows:

Table 1. Distribution of students by SES

SES	Nº schools	Nº students	% sample of students by SES
Low	2	139	27%
Middle	2	199	39%
High	2	170	34%
Total sample	6	508	100%

Source: Author´s own elaboration

The characteristics of each socio-economic status group, in terms of parental education, income and vulnerability, are the following:

Table 2. Key characteristics of each SES group

SES	Average monthly income per capita (US$)	Father education (average years)	Mother education (average years)	Vulnerability Index (0% - 100%)
Low	$385	8	8	68%
Middle	$893	12	12	32%
High	$3,647	17	16	1%

Source: Ministry of Education of Chile. Mineduc (2011).

As shown in Table 2, all three SES categories are not only statistically different but also substantially different in terms of parental education, per capita household income and vulnerability.

5.2. Estimation method

Two main strategies were used to study students´ perceived ex-ante returns to post-secondary education. Firstly, students were directly asked if higher education was profitable from their perspective. Secondly, they were asked different questions relating to the perceived costs and benefits (earnings) of higher education. Following a series of studies (e.g. Brunello et al., 2001; Carvajal et al., 2000; Menon, 1997, 2008) we ask students about their assessment of their personal

wage prospects.

The information provided by students was used as an input to estimate perceived returns to higher education using the 'short cut' method proposed in Psacharopoulos (1992). The use of this technique has proven to render estimates comparable to those provided by more sophisticated methodologies (Menon, 1997, 2008). The 'short-cut method' allows the ex-ante rate of return (RoR) to higher education to be calculated as follows:

$$r = \frac{(E_h - E_s)}{N(E_s + C_h)}$$

The calculation is made where $\mathbf{E_h}$ is the estimated annual earnings at the start of employment after graduation from higher education; $\mathbf{E_s}$, the estimated annual earnings at the start of employment after graduation from secondary education; **N**, the duration (years) of the higher education program; $\mathbf{C_h}$, the estimated annual direct cost of higher education; and **r**, the resulting annual ex-ante expected return rate to higher education.

The short-cut method is also used in this study to calculate the *actual* rate of return to higher education in Chile, using officially available statistics from the Ministry of Education. This data includes mean wages for higher education and school graduates in their first year after graduation, real tuition and fees and actual duration of study programmes[45].

6. Results and discussion

6.1. Perceptions of profitability

Table 3 presents students´ subjective evaluation of higher education as an investment. Our data shows that most students strongly agree with the statement that 'studying in HE is a profitable investment'. While only 2.4 per cent of students disagree or strongly disagree with the statement, 89.5 per cent of students agree or strongly agree with the view that higher education is a lucrative investment.

[45] Ministry of Education website: www.sies.cl

Table 3. Perception of higher education profitability among students

Do you agree or disagree with the following statement?	% Strongly disagree (1)	% Disagree (2)	% Neither agree nor disagree (3)	% Agree (4)	% Strongly Agree (5)
'Higher education is a profitable investment'	1.2%	1.2%	8.1%	30.7%	58.8%

Source: Author´s own elaboration

Nevertheless, as Table 4 shows, students' perceptions significantly vary across socio-economic status. While 78 per cent of students from high SES strongly agreed that studying in HE has a high return, 55 per cent and 40.4 per cent of students from middle and low SES, respectively, shared this view.

On the other hand, while no students from the richer groups believed that higher education had a low profitability, 5.9 per cent of low SES students did so in some degree. As a result, regardless of the absolute levels of return, low SES students are much less enthusiastic about HE's profitability than their high SES peers.

Finally, if responses are recoded into a scale from one (strongly disagree) to five (strongly agree), it is possible to observe that, on average, all SES groups tend to agree that higher education is rather profitable. High SES students exhibit an average of 4.8 points, while middle and low SES students 4.4 and 4.1, respectively. However, although these differences may seem small, they are statistically significant between all SES groups ($p < 0.05$).

Table 4. Perception of higher education profitability among students by SES

Do you agree or disagree with the following statement?	% Strongly disagree (1)	% Disagree (2)	% Neither agree nor disagree (3)	% Agree (4)	% Strongly agree (5)
'Higher education is a profitable investment'					
High SES	0%	0%	3.0%	19.0%	78.0%
Middle SES	0.5%	1.6%	10.5%	32.5%	55.0%
Low SES	3.7%	2.2%	11.0%	42.7%	40.4%

Source: Author´s own elaboration

6.2. Perceived rates of return of higher education

Average 'perceived' and 'actual' rates of return to higher education using the short-cut method are presented in Table 5. Other relevant return estimates for Chile are also provided (Arellano and Braun, 1999; Meller, 2010). These comparative studies are based on actual labour market wages and real tuition costs. Although Arellano and Braun (1999) and Meller (2010) estimate *actual* returns using the full method, Meller (2010) also provides *actual* short-method estimations.

Mean *perceived* returns resulting from our data analysis provide estimates that are slightly higher than, although comparable to, the *actual* returns we estimated using the same methodology but introducing the actual realised data from the labour market. According to our study, while average estimated *perceived* returns are 16.6 per cent, *actual* returns are 14.4 per cent. The perceived returns we found are also consistent with real average returns (16.5 per cent) provided by Arellano and Braun (1999) and the short-cut estimates (15.5 per cent) provided by Meller (2010). As a result, we can conclude that Chilean secondary students make, on average, quite accurate estimates of real returns to higher education. This is consistent with most international evidence presented in section 2.

Table 5. Perceived and actual return rates to higher education

	Average *perceived* returns (short-cut method)	Average *actual* returns (short-cut method)	Average *actual* returns, using short-cut method (Meller, 2010)	Average *actual* returns, using full method** (Arellano and Braun, 1999)	Average *actual* returns, using full method* (Meller, 2010)
Higher education rate of return (RoR)	16.6%	14.4%	15.5%	16.5%	21.95%

Source: Author´s own elaboration

*Rate of return estimated for 14 university undergraduate programmes (Meller, 2010).
**Rate of return estimated for university taught programmes (Arellano and Braun, 1999).

Nevertheless, aggregate average estimates hide extraordinary variations occurring at disaggregate levels. Two dimensions are worth highlighting in the Chilean case: variations observed among individual students and differences observed among groups of students from different socio-economic status (SES).

Variations at individual level are significant. If students are sorted according to their perceived rate of return of higher education, students in the 25th percentile provide RoR estimates of 2.1 per cent, while students in the 75th percentile provide estimates of 21.7 per cent. In other words, the top 25 per cent of students perceive higher education returns to be more than 10 times greater than those situated in the bottom 25 per cent. Moreover, while students in the 10th percentile estimate returns to higher education to be zero, those in the 90th perceive a return rate of 30.9 per cent.

Table 6. Distribution of perceived return rates to higher education

RoR percentile	**10th**	**25th**	**75th**	**90th**
Perceived rate of return to higher education	0%	2.1%	21.7%	30.9%

Source: Author´s own elaboration

Since individual perceived returns are the ones guiding students' decisions, not aggregate average ones, the important dispersion of these estimates should cast serious doubts upon the accuracy and rationality behind perceived returns to higher education at the individual level.

Variations among students from different SES are also worth noting. Table 7 shows that mean perceived rates of return of higher education are positively correlated to SES status. While students from upper SES estimate a RoR of 21.1 per cent, students from middle and low SES provide lower estimates of 13.8 per cent and 11.0 per cent, respectively[46]. On average, poorer students perceive a RoR that is approximately half the one expected by high SES students.

Table 7. Mean perceived return rates to higher education, SES Students

	Low SES students	Middle SES students	High SES students
Mean perceived RoR	11.0%	13.8%	21.1%

Source: Author´s own elaboration

Finally, a multiple regression analysis was used to estimate the effect of gender, socio-economic status, academic ability and level of information gathering activities reported by students on perceived returns to higher education. In order to account for academic ability, each student's academic ranking is introduced as a proxy. Specifically, we generate a dummy variable that identifies those students belonging to the top 50% of their class (we also experimented with other ranking dummies (e.g. top 10%) or absolute grades, and the results are not altered). Additionally, in order to control for the amount of information they report having, we include the level of agreement of students with the following statement: '*I have searched and compared information about tuition fees, quality of institutions and careers in order to decide where to study*'. Their responses are recoded into a scale from one (strongly disagree) to five (strongly agree). This constitutes our 'Information Gathering' variable.

As shown in Table 8, only SES and Information Gathering are statistically significant ($p < 0.05$). Among these variables, SES has the largest effect on expected RoR. Indeed, belonging to the high SES group increases the perceived ex-ante rate of return to higher education. A higher level of information gathering also has a significant positive effect on expected RoR. None of the other variables had a statistically significant effect over the levels of perceived RoR to higher education in Chile. It seems particular interesting that gender is not a variable that affects the ex-ante

[46] Only differences between mean RoR for low and high SES students are statistically significant ($p < 0.05$).

perceived rates of return of higher education in Chile. Indeed, it would be reasonable to anticipate female respondents to expect a lower return, considering the existence of gender discrimination in the labour market. Although more research seems necessary, it might be possible to hypothesise that the younger generation of girls expect to be treated more equally than their predecessor when they enter the labour market.

Table 8. OLS regression of perceived rate of returns on gender, SES, academic ability and information gathering+

Independent variables	Standardised coefficients (Beta) and T-statistics*
Gender	.008
	(0.146)
Socio-economic status (SES) – Middle SES dummy	.048
	(.668)
Socio-economic status (SES) – High SES dummy	.196**
	(2.601)
Academic ranking (Top 50%)	.015
	(.286)
Information gathering	.125**
	(2.276)
R square	.037
Adjusted R square	.022
F	2.553**
Observations	340

Source: Author´s own elaboration

*T-statistics are presented in parenthesis. ** Statistically significant at 5%.

+ Data description available in Annex 1.

In conclusion, these results confirm the importance of further studying the effect of socio-economic contexts over students' perceptions, expectations and decision-making processes.

7. Discussion of Results: exploring SES differences and preliminary explanations

Our results trigger a series of questions regarding the nature and origin of the observed differences between the perceived returns of SES groups. Where do these differences come from? Are these the result of inadequate levels of information? Are they consequence of different preferences (i.e. risk aversion, inter-temporal discount rates, etc.), embedded in uneven social-economic contexts? Are they simply mirroring the unequal actual returns that each group obtains in the labour market,

and thus reflect, if only in part, the existence of differential returns to quality of education or even the existence of labour market social discrimination? Although our data does not provide any straightforward answer to these questions, it would seem reasonable to expect that the final answer does not exclude any of these explanations. Moreover, it is probable that all of them contribute to understanding what we are observing in reality. This section will explore possible explanations for these socio-economic differences in expectations, examining three main issues: information, preferences, and actual returns[47].

There is significant evidence showing that students access insufficient and inadequate information. Although, human capital models tend to assume perfect information, Leach and Zepke (2005) observe that low socio-economic groups commonly engage less in information search-related activities and tend to rely more on interpersonal networks, which are deficient as sources of tertiary education information in the case of poorer students (e.g. parents lacking post-secondary education).

This is also true for our sample of Chilean students: 49.6 per cent and 53.6 per cent of students from low and high SES groups, respectively, declare that their parents are their main source of information for their decisions regarding higher education. Although this is consistent with the international evidence (Leach and Zepke, 2005), it is a matter of concern in the case of students from lower SES, as most of their parents did not even finish high school, and thus are unlikely to provide accurate information on higher education. Additionally, in line with similar studies (Menon, Saiti and Socratous, 2007), students declare allocating low levels of effort searching for information, regardless of SES. The number of higher education institutions that they declare to have personally visited is 1.4 on average among high SES students, and only 1 on average among the poorest. These averages, however, hide a significant variation. While 29.8 per cent of high SES students had not visited any institution, this percentage reached 45 per cent among low SES students. Moreover, the number of higher education institutions that had been 'visited' slightly increased when considering those that had been accessed online (websites). Students of low and high SES declared accessing 1.9 and 2.9 institutions on average, respectively. It should be no

[47] In this section we concentrate on differences between poor and rich students only, since only differences between these two groups were statistically different, in terms of perceived returns.

surprise then, that only 19.7 per cent of students reported feeling very well informed to make an adequate decision regarding the higher education programme and institution of study.

In conclusion, although poorer groups are most affected by inadequate and insufficient information, this seems to be a problem across all groups. Therefore, in order to convincingly explain the large differences in perceived rates of return by SES, we must seek for answers that go beyond imperfect information.

According to Usher (2005) students from lower socio-economic backgrounds systematically underestimate benefits and overestimate average costs of tertiary education, more often that the rest of the population. The result of this 'cognitive' distortion is that poor students tend to underestimate real expected rates of return, leading them to under-invest in education. A possible explanation for these differences resides in inter-temporal discount rates (Becker and Mulligan, 1997). According to Usher (2006:21), research shows that 'long-term poverty encourages short-term thinking', concluding that poor students actually have higher inter-temporal discount rates. These findings are consistent with Harrison, Lau and Williams (2002) and Oosterbeek and van Ophem (2000), who find that inter-temporal discount rates vary considerably by socio-economic status. Individuals from poorer backgrounds have higher discount rates, negatively affecting their incentives to invest in human capital.

Students in our sample also present different inter-temporal discount rates among SES groups. We confirm this phenomenon through two sets of questions. First, while only 2.4 per cent of high SES students agree or strongly agree with the statement that 'since studying in higher education takes too long, it's not worth the wait', this percentage is almost eight times higher (18.4 per cent) among students from low SES. Second, in order to test this phenomenon in detail, we developed a short experiment asking students between two choices: receiving $1.000 US dollars today or $1.000 + $X US dollars a year after. Since there is no risk involved in this game, their choices reflect their different inter-temporal discount rates. The results are presented in Table 9. They confirm international evidence. Poorer students tend to have higher discount rates than their richer peers. For example, when the game offers a 60% return, 87.7% of low SES students are willing to wait for a year, compared with 97% of high SES students.

Table 9. Inter-temporal discount rate by SES. An experimental approach

Alternative Games	Payment Option A (Today)	Payment Option B (1 year from today)	Discount rate (%)	% of low SES students choosing option B	% of high SES students choosing option B
1	US$ 1,000	$1,400	40%	87.7%	94%
2	US$ 1,000	$1,600	60%	87.7%	97%
3	US$ 1,000	$1,800	80%	92.4%	98.2%

Source: Author´s own elaboration

Similarly, studies tend to disregard risk aversion and perception differences across SES groups. Although international evidence is ambiguous regarding the relative risk aversion of different socio-economic groups (Usher, 2006; Callender, 2005), higher attrition rates among poorer tertiary students could partly explain their tendency to have a higher ex ante risk perception. In fact, in our sample of Chilean students, a considerable percentage of students from low SES perceived higher education to be a high risk investment: while 27.9 per cent of students in low SES declared that there is a 'high risk of abandoning my studies before completion', this percentage dropped to 9.5 per cent among high SES students. As a result, it is possible to understand why 20.4 per cent of students from low SES declared that studying in higher education is 'a risky project that I would rather avoid'. This fraction is only 4.1 per cent among richer students.

Finally, beyond insufficient information and aspects associated with preference formation (e.g. inter-temporal discount rates), there are rational factors that could objectively explain the observed differences in perceived returns to higher education across different SES groups.

Future earnings and students' economic expectations should be affected by the quality of education students receive (Belfield, 2000). This factor could also explain part of our results. Data provided by the Ministry of Education of Chile confirms the existence of a large quality gap between schools of different SES. High SES schools score, on average, approximately 1.99 standard deviations higher than low SES schools in the national tests in language and mathematics (Mineduc, 2010).

Evidence shows that graduates from low SES receive lower wages and face greater difficulties finding a job (Grayson, 1997; Neuman, 1991). Based on these facts, it is totally rational for lower SES groups to expect lower returns. Although the evidence is not entirely conclusive (Psacharopoulos, 1994), and in some cases shows that differences tend to dissipate over time (Usher, 2006), it demonstrates the importance of further investigating the actual returns these groups are obtaining from higher education.

The effect of social capital on expected higher education returns should also be examined. A classical study by Granovetter (1974), carried out in the United States, showed that approximately 60 per cent of job seekers declared having used contacts to get a job, while only less than 20 per cent used formal means of search and application. Evidence showed that those who searched for a job using contacts were more effective in obtaining them, and also tended to get better-paid and more valuable positions (Granovetter, 1974). As a consequence, those social groups with higher levels of social capital tend to get better jobs and higher wages (Lin, 2001)[48].

Most importantly, the persistence of labour market discrimination practices should not be overlooked when investigating expected returns across SES groups, especially in extremely unequal societies, such as the Chilean. Social class discrimination studies carried out in Chile show that class measures yield 30 to 35 per cent of earning gaps among individuals from different social classes, even after all other productivity related factors are taken into account (Nuñez and Gutierrez, 2004). In conclusion, the observed gap in perceived returns also reflects the existence of labour market inequality and social discrimination.

8. Concluding remarks and policy implications

Inequality is thought to hinder social mobility through several mechanisms. An important one relates to its negative effect on educational attainment, when credit constraints exist. For this reason, many governments around the world have increasingly focused on the provision of student

[48] The relevance of social capital for the Chilean case is presented and discussed in the next chapter of this dissertation.

loans to tackle credit constraints, in the hope that this will be an effective policy tool to expand the higher education participation rate of low-income students.

Indeed, the human capital theory predicts that the amount and type of education a person is willing to undertake depends on the net benefits generated by this kind of investment. As a result, most studies in this area have focused on providing accurate estimates of economic internal rates of return to education. These estimates have been used to argue that as long as they are higher than the interests payable on student college loans, and people act rationally, they would ensure individuals' willingness to cost their own education through student loans. This article has argued that this argument has several problems that should be taken seriously.

Firstly, from a theoretical perspective, this paper has argued that human capital investment decisions are driven not only by economic returns, but also by non-economic factors, such as one's social identity (Akerlof and Kranton, 2010). Social contexts and preference formation greatly matter and must be taken into account.

Secondly, from a methodological point of view, I have argued that, even when focusing exclusively on economic rate of returns, it is important to examine subjective or perceived returns and not 'actual' ones, as only the former should be expected to affect real life choices. Although this is self-evident, most studies on this area focus in the latter.

Finally, from an empirical perspective, this article contributes new and rich evidence, which aims to address existing weaknesses in the current literature in this field. In fact, although there is a growing body of literature on perceived rates of return, most of it (1) has focused in developed countries; (2) has surveyed higher education undergraduates instead of secondary school students; and (3) has ignored the important differences that arise when one takes socio-economic factors into consideration.

This study has shown that, on average, students tend to accurately estimate rate of returns to higher education in Chile. Nevertheless, important disparities exist among students from different SES. Indeed, low SES students report much lower perceived rates of return that their high SES peers.

These results have important policy implications for Chile and other countries in the world, which should be taken into consideration in order to design adequate funding schemes. In fact, if *perceived* rates of return are driving higher education participation decisions (even if only in part), our results show that there should be no surprise if poorer students decide to stay out of higher education. This pattern should be expected to increase in the presence of high tuition fees and cost-sharing schemes, such as the ones observed in Chile[49]. Moreover, lower perceived rates of return among poorer students, ceteris paribus, should affect their willingness to take loans to finance their education. In fact, our data shows that students of low SES have greater debt aversion than other SES groups: while 48.5 per cent of students in higher SES show high willingness to finance their studies through a loan, if required, only 28.9 per cent of students of low SES share this attitude. This is probably due to their different perceptions of returns and risks of higher education. Indeed, while 35.6 per cent of students from low SES think that they 'will struggle to repay their loans', only 10.7 per cent of high SES students share this view.

These results validate and support the new direction taken by the higher education funding policy in Chile since 2018, which provides total gratuity for the six poorest income quintiles enrolled in accredited higher education institutions. The fact that, the state will cover the tuition fees of all students from low and low-middle classes, tackles, among other, the problems identified in this paper which hinder the participation of these groups of students and make loan schemes inappropriate to support the poor.

In conclusion, further research is needed to understand the underlying mechanisms affecting students' perceptions and participation decisions. Meanwhile, governments must be aware of the great risks behind universal indiscriminate loan systems that do not seriously take into account the importance of socio-economic contexts. Failing to do so will only help reproduce inequality and deny poorer students their chances of social mobility.

[49] Chilean students face the highest tuition fees in the world, as a percentage of the country's income per capita (Meller, 2011).

Paper 4

Divergent trajectories: From the social mobility promise of higher education to the labour market reality of its graduates

1. Introduction

Since the second half of the 20th century, most countries have strongly promoted the expansion of higher education. This has been possible due to the broad consensus regarding its economic and social benefits. It has been presented to society as an appropriate mechanism to promote social mobility and equalise opportunities among its citizens. That is, regardless of the social origin of individuals, higher education seems to promise to each of them, the possibility of achieving the position and occupational status (destination) they want and aspire to in the labour market. An institution based on meritocratic principles, where talent and effort should be the fundamental explanatory factors of the professional trajectories of individuals.

However, international evidence shows that, as higher education systems expand and grow, they experience a greater degree of differentiation and stratification (Shavit, Arum and Gamoran, 2007). In fact, in most of the OECD countries, the expansion of these systems has been linked to the proliferation of low-quality private institutions, with an emphasis on vocational and technical education. This expansion, aimed especially at lower income social groups, provides low-value academic degrees (Brunner, 2015). Consequently, the comparative evidence shows that the impact of tertiary education on social mobility is strongly affected by the evolution and specific institutional characteristics of each educational system (Triventi, 2013; Shavit and Muller, 1998). In synthesis, not all students have access to higher education degrees of a similar quality, thus the insertion and labour trajectories of graduates differ and, in many cases, even diverge. Moreover, the cultural and social capital of the family of origin tends to be transferred from one generation to the next, through indirect and direct mechanisms. On the one hand, parents manage to transfer their advantages indirectly through the quality, quantity and type of education received by their descendants. In addition, through the use of social networks and contacts, parents have a direct impact on the employment of their children. For this reason, the evidence shows that even among

those who received an education of similar quality – i.e. graduated from the same institution and programme of study -, the social origin of graduates continues to be a discriminating factor when entering and progressing in the labour market. Consequently, access to higher education and the resulting labour trajectories of graduates tend to differ according to the social stratum of origin. Sometimes they are parallel trajectories that rarely intersect; other, divergent trajectories that segregate individuals in different life courses that grow apart.

Indeed, higher education not only plays a key role in social mobility and the formation of the labour trajectories but also in the determination of wage inequality. In both Latin America and Chile, there is a significant correlation between the changes observed in the returns to higher education and the variations in wage inequality. In fact, wage inequality in the region and Chile experienced a decline since the beginning of the 2000s, mainly linked to the reduction of the wage premium to higher education, resulting from a greater relative supply of skilled workers.

The regional evidence shows that the observable variables traditionally included in the econometric models (education, experience, gender, district, etc.) explain around 40% of the total variance of wage inequality. Within this partial percentage, the education variable explains 70%. That is, the educational level of individuals, by itself, explains a little more than a quarter of the total variance of wage gaps.

While this evidence allows highlighting the relative importance of education, it also lights up a warning signal, since 60% of wage inequalities are not explained by the variables traditionally included in the models. Moreover, variables other than education explain three-quarters of the total variance in wage inequality in Latin American countries.

Based on this evidence, it may be argued that the capacity of existing models is very limited to explain observed disparities. It is urgent, therefore, to better understand these gaps, analysing less studied dimensions until now.

On the one hand, dimensions linked to the impact of the configuration of productive, tax, labour and social security systems, which exert influence not only on wage gaps but also on income gaps. On the other hand, it is also essential to study dimensions linked to the impact of the type and quality (beyond the level) of education, and the socio-economic origin and social capital of

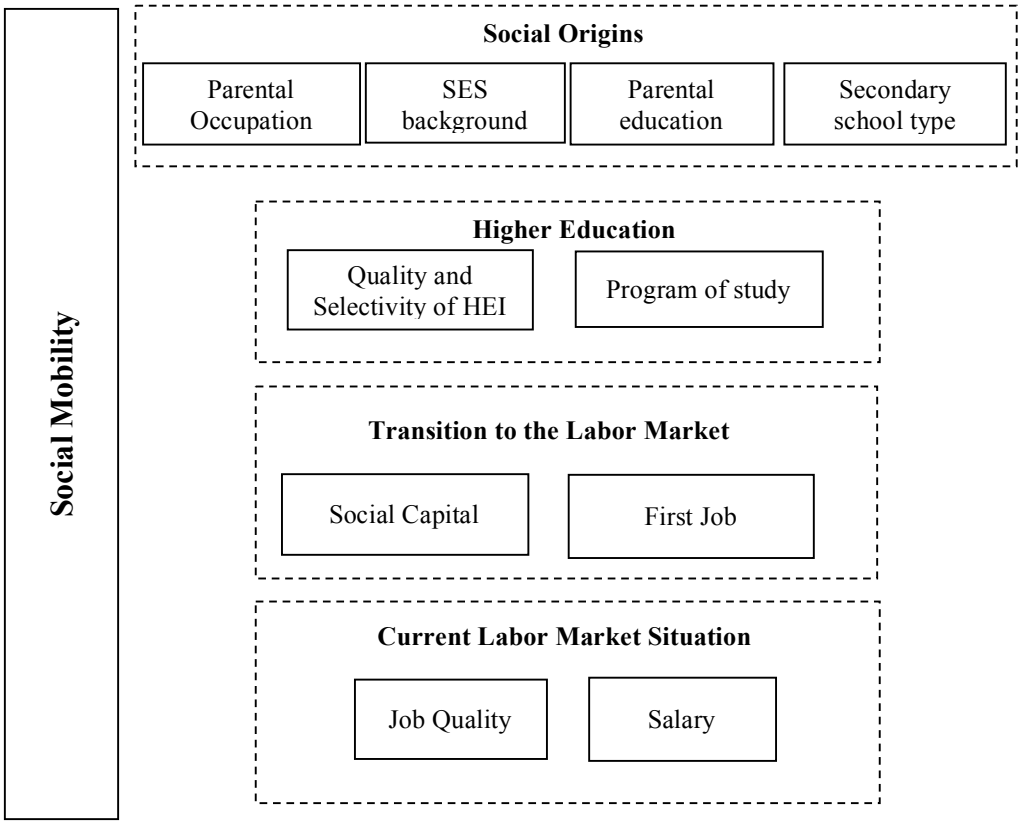
individuals, on the type of labour insertion, the heterogeneity of returns to education and the quality of jobs. Analysing these variables in detail will enrich the models used and deepen our understanding regarding the underlying causes that explain inequality between individuals.

In summary, based on the central role played by the higher education system on social mobility and wage inequality, a series of questions arise that should be addressed: Do higher education systems fulfil their equalizing promise? Will they be able to compensate for quality gaps in the school system and its effects on the cognitive and socio-emotional development of youth? Will they be able to reverse the structural inequalities that characterise these societies and promote greater social fluidity? Do these systems provide professional training that allows access to high-quality jobs and economic well-being?.

Answering these questions requires the collection of detailed and high-quality data, both at a systemic and individual level. However, the data and evidence required to study these phenomena are not fully available in Latin America, which prevents adequately informing the public debate and the decision-making process to promote higher education reforms in the region. This research aims to address the urgent need to study and guide the higher education institutional reforms in Latin America, in order to ensure that they succeed in promoting quality education, which is more equitable and inclusive.

The present study is structured in five sections. In addition to this one, Section II discusses the importance of higher education for social mobility. Section III briefly describes the Chilean higher education system, from a trajectory perspective. Section IV presents the research methodology. Section V provides the descriptive and analytical results of the study. Finally, Section VI presents the main conclusions and implications.

Diagram 1. Thematic structure of the result sections.



Source: Author´s own elaboration

2. Higher Education and Social Mobility.

2.1.Social origin, education and occupational destination: theoretical background

Latin America is the most unequal region on the planet (De Ferranti et al., 2004; Lustig, 2015). Disparities permeate the economic, political and social spheres and are rooted in institutional factors that are both structural and historical (González, 2020; UNDP, 2017; Rodríguez, 2017). Beyond the significant substantive considerations that make addressing this phenomenon urgent, from an instrumental perspective these gaps should be a public policy priority (Rawls, 1971; Sen, 1999). Indeed, inequality negatively impacts a country's economic development, democracy, social cohesion and social mobility (Berg and Ostry, 2011; Boix, 2003; Acemoglu and Robinson, 2006; Tironi, 2008; Corak, 2013).

Indeed, the level of inequality and social justice in a society is strongly connected, though not exclusively, to the degree to which individuals' opportunities are determined by their social origin

(Dubet, 2011). From this perspective, it is not enough for a large number of individuals to experience an increase in their wellbeing or quality of life due to absolute upward mobility in the occupational structure. Rather, it is fundamental for each of them to have the same likelihood of reaching a desirable social or occupational position, regardless of their starting point or social origin. This fundamental aspect distinguishes absolute social mobility from relative social mobility. While economic growth and the transition towards a more developed society are sufficient to increase the former, in order to boost the latter, social barriers and diverse forms of discrimination that reduce equality of opportunities must be eliminated. As a result, as the correlation between a person's social origin –i.e. described by the job status of their mother and father- and their final destination –their own occupational status in the labour market- is weakened or dissipates, relative social mobility and equality of opportunities increase.

Research on social mobility, which has developed significantly since the 1960s, shows that there is an important positive correlation between parents' social origin and the occupational status attained by their children in the labour market (Blau and Duncan, 1967; Erikson and Goldthorpe, 1992). Indeed, the influence of the level of socio-economic origin acts through both indirect and direct mechanisms that impact children's trajectories.

Analyses of the intergenerational transmission of inequalities show that indirect mechanisms tend to be more important than direct ones. In fact, studies have determined that the intergenerational relationship is strongly mediated by education (Blau and Duncan, 1967). In other words, parents' occupational status is transmitted indirectly through the quantity, type and quality of education provided to their children. The latter do not only benefit from the parents' economic capacity to acquire more and better educational services but, as the theory of social reproduction suggests, they also benefit from the transmission of parents' cultural capital, which allows them to better take advantage of those opportunities (Bourdieu and Passeron, 1977). Some argue that the reproductive role of education could even reach a point at which the students from each social class receive a different type of education based on a hidden differentiated curriculum (Bowles and Gintis, 1975). These scholars suggest that students from lower classes would be trained to be obedient, passive workers and that students from upper classes would be taught to develop their creativity, critical thinking and leadership.

Another way of understanding the indirect process through which parents' social class impacts children's educational attainment is offered by Boudon (1974), who identifies two effects: a primary effect defined as the impact of social class on young people's educational performance and a secondary effect that is understood as the impact of social origin on educational decisions (transitions and trajectories) given the available choices for each level of achieved educational performance. It would follow that young people with more social advantages would perform better and would make more ambitious, profitable educational decisions that would allow them to achieve better positions in the job market.

Parents´ social class also has a direct effect on the positions that children later access in the labour market which are not channelled through education. For example, parents can use their social capital and networks directly in the labour market to help their children to find better jobs (Granovetter, 1973; Lin, 2001). International evidence shows that this effect is not linear, and it tends to decrease as the educational level attained by youth increases. Specifically, there is a lower correlation between origin and destination among those who possess tertiary education (Hout, 1988; Vallet, 2004; Breen, 2004; Torche, 2011). That is, among those who graduate from higher education, social origin ceases to be determinant for their labour trajectories. This phenomenon has positioned tertiary education as an "opportunity equalising" mechanism.

In order to explain its equalising effect, some argue that labour markets for graduates of tertiary education are more meritocratic, in line with the theory of modernisation. From this perspective, as society and the economy modernises educational credentials would increasingly be the key to access valuable positions in society (Breen and Jonsson, 2005).[50]

Contrary to the scholars mentioned above, some authors focus on the selective nature of educational systems and the fact that those who access higher education and manage to graduate possess quite similar unobservable and observable characteristics (Mare, 1980). This social selection process would produce a homogenization of unobservable characteristics, such as motivation and skills, that are highly valued in the labour market. This would in turn "artificially" weaken the intergenerational relationship perceived between social origin and destination (Triventi, 2013). Some studies relativise the equalising power of higher education by showing that

[50] The theory of modernisation also holds that the relationship between educational attainment and social origin should weaken as countries become more industrialised (Treiman, 1970).

the intergenerational connection between social class of origin and destination would re-emerge among those who complete postgraduate programmes. Among those postgraduates, the weight of social origin once again acquires a certain level of importance for explaining their job trajectories (Torche, 2011).

While education could potentially have an important capacity to equalise opportunities, the evidence shows that its final impact varies based on the institutional structure, level of selectiveness and stratification of the education and social systems. This can be observed in primary, secondary and higher education.

In his classic study, Turner (1960) compares the performance of the school systems in the US and England in the 1950s. While the former was characterised by its openness, in which members of various social classes mixed and learned together in the same classroom, sharing a common experience, the latter was closed and highly stratified. These patterns generated two patterns of social mobility. In the first case, a mobility based on "contest" in which those who have more skills and make a greater effort compete and make more progress based on their merits. In the second, there is a "sponsored" mobility in which the only way to make progress throughout the educational and social system, and access highly selective schools and valuable positions in society is through the support, acceptance and consent from members of the elite. From this perspective, the family's capacity to transmit the social advantages of origin through education would be much greater in stratified/closed educational systems.

At the level of tertiary education, more recent studies observe that as higher education systems expand and massify, they experience a greater level of differentiation and stratification (Shavit, Arum and Gamoran, 2007; Roksa et al., 2007). In the majority of OECD countries, the expansion of these systems has been linked to the proliferation of low-quality private institutions with an emphasis on technical-professional education (OECD, 2008). This expansion, which is mainly directed at lower income social groups, provides low-value academic degrees in the labour market (Brint and Karabel, 1989). As such, comparative evidence shows that the impact of tertiary education on social mobility is shaped by the evolution and specific institutional characteristics of each educational system (Allmendinger, 1989; Kerckhoff, 1995; Shavit and Muller, 1998; Triventi, 2013).

The degree of expansion and institutional differentiation thus plays a key role in the social mobility process, whether it is vertical (hierarchy between degrees or educational cycles within higher education) or horizontal differentiation (hierarchy based on the quality of the higher education institutions of the same cycle). In highly stratified higher education systems, there is a smaller direct effect of social origin on success in the job market because social advantage is channelled through the type of education attained (greater indirect effect). By contrast, there is a larger direct effect of social origin on the status attained in the job market in less hierarchical higher education systems (Triventi, 2013).

As some scholars have suggested (Shavit and Blossfeld, 1993; Raftery and Hout, 1993), this evidence calls into question the supposition that greater access to education in itself leads to a greater level of equality of opportunities. Based on the hypothesis of `Maximally Maintained Inequalities´ (MMI), as an educational system expands, the first to benefit from the new opportunities are members of the upper class. Therefore, access gaps in terms of educational attainment are maintained or may even increase among social classes. They only tend to decrease when the participation of the upper class reached saturation at a certain educational level and then the middle and lower classes begin to access it (Shavit, Arum and Gamora, 2007). However, at this critical moment, the upper classes also tend to quickly move to the next educational level in order to maintain their distance from and advantage over the rest. International evidence shows, that when educational systems expand, the difference in levels of educational attainment between social classes tends to remain stable, and only decreases when the saturation point is reached (Shavit and Blossfeld, 1993; Shavit, Arum and Gamora, 2007).

In addition, as higher education expands and becomes more universal, a complementary phenomenon tends to develop in which the elite seeks to distinguish itself based not only on the amount of education acquired, but on its quality. According to the `Effectively Maintained Inequalities´ (EMI) hypothesis, when educational systems expand and the access gap in a certain educational level decreases, new inequities are artificially generated within that same level through greater horizontal differentiation. This would be the result of the pressure and strategies undertaken by social advantaged groups in order to re-establish some level of qualitative differentiation in the quality and type of education attained (Lucas, 2001). Despite greater access, individuals from higher socio-economic levels thus study in selective institutions that grant degrees that yield

greater returns and recognition in the job market (Zhang and Thomas, 2005). The system thus tends to partially re-establish the intergenerational relationship that exists between origin and social destination.

The phenomenon described above is clearly observed in the Chilean case. Its higher education system has been characterised by rapid expansion and a high level of vertical and horizontal stratification, which has generated parallel and even divergent trajectories among social groups. While members of upper class manage to access prestigious higher education institutions and profitable programmes of study, those from middle and lower social classes tend to enrol in institutions and programs that have lesser reputations and are not as profitable (Brunner, 2009).

In short, the weight of social origin on the labour trajectories of descendants is mainly but not exclusively transmitted through education. Wealthy families mobilise different strategies so that their children attain greater levels of education and take advantage of the stratification of the system, obtaining highly prestigious credentials that have greater economic value in the labour market. As a result, young people from lower social classes tend to be left behind throughout the educational process and also access institutions and academic degrees with less social prestige and fewer economic returns (Brunner, 2009).

2.2.Returns on higher education: theoretical approaches and methodological problems

While education has an unquestionable intrinsic value and is a fundamental human right, it also has an instrumental value (Sen, 1999). From a macroeconomic perspective, education is key for promoting sustained economic growth based on the generation of knowledge and innovation (Lucas, 1988; Romer, 1990). From a microeconomic perspective, education is important for increasing productivity and job market opportunities (Oliveira et al., 2007; Psacharopoulos and Patrinos, 2004).

The general economic value of education and that of higher education in particular is a topic that has been specially studied in the field of economics since the 1950s based on the theory of human capital (Mincer, 1958; Schultz, 1961; Becker, 1964; Mincer, 1974). This theory argues that education is an investment that expands workers' abilities and productivity and thus increases their salaries. This stands in contrast to the theory of screening, which holds that education does not

actually increase workers' productivity, but instead provides the employer with information regarding the applicants' innate abilities, thus helping the reduce the information asymmetries that exist in the labour market (Arrow, 1973; Spence, 1973; Stiglitz, 1975). However, different studies have discarded this hypothesis or have yielded rather weak evidence, confirming the dominant effect of the human capital hypothesis (Layard and Psacharopoulos, 1974; Card, 2001; Clark and Martorell, 2014).

The process of estimating rates of return on education is not free from methodological debates (Ashenfelter et al., 1999; Card, 2001). For example, various studies discuss the biases that could be generated due to unobservable variables omitted from econometric regressions such as individuals' innate abilities. From this perspective, if those who are cognitively more able tend to reach the highest levels of education (tertiary education), estimates of rates of return would be biased upwards due to a problem of endogeneity. To put it differently, the causality identified between the educational level reached and the salaries earned would be less robust as the higher salaries observed could be due to the greater abilities of those who self-select to study in higher education.

Nevertheless, Griliches (1977), Ashenfelter et al. (1999) and Card (2001), among others, reviewed various studies that seek to solve the overestimation of rates of return caused by the ability bias[51] and reach the conclusion that this bias is not significant in size (generally less than 10% of the estimated coefficient). Moreover, when considering the effect of measurement errors and using other methods such as instrumental variables, this bias tends to be eliminated and even reverted. As such, the presence of biases of abilities in the estimates conducted in the field does not substantively change the results and conclusions that the studies reach.

Another important limitation of these estimates is that they represent 'average' rates of return that generally do not consider individuals' socio-economic characteristics and fail to capture differences regarding the received type and quality of the higher education. In order to partially solve this problem, a series of studies at the international level have attempted to elucidate the

[51] The literature usually reflects three strategies for addressing this issue (Ashenfelter et al., 1999). First, the model includes a proxy variable of ability which assumes the risk that these variables correlate to educational level, which generates a downward bias. They also use alternative estimation methods, employing instrumental variables to address the problem of endogeneity. Finally, some studies use samples of twins or siblings with different educational levels but who supposedly share common unobservable variables.

relative importance of different exogenous variables over employability, salaries and employment status. The most important factors identified include those associated with gender (O´Neil, 2003), cognitive and socio-emotional abilities (Murnane, Willet and Levy, 1995; Currie and Thomas, 1999; Cunha and Heckman, 2086) and race (Altonji and Blank, 1999), as well as factors linked to the field and the programme of study (Thomas, 2000; Chia and Miller, 2003) and the type of higher education institution (Brewer et. al., 1996; Kane and Rouse, 1995; Black and Smith, 2006; Long, 2008). Factors associated social networks also have been shown to have a significant influence (Granovetter, 1973; Lin, 2001). As such, correctly estimating the return on higher education and its power to promote social mobility should include these factors in order to determine their impact and better understand the interaction between the underlying factors.

Numerous scholars have studied this problem in Chile (Arellano and Braun, 1999; Beyer, 2000; Sapelli, 2003; Núñez and Gutiérrez, 2004; Bravo, Sanhueza and Urzúa, 2007; Guzmán and Urzúa, 2009; Meller, 2010; Urzúa, 2012; Hastings, Neilson and Zimmerman, 2013; Zimmerman, 2016). Recently, Hastings, Neilson and Zimmerman (2013) used disaggregated administrative data and found positive and significant returns associated with graduating from a selective institution and programme. Furthermore, they found no significant differences linked to individuals' socio-economic level except in the field of business, where wealthier students obtain advantages. While these results are interesting, it is important to consider the fact that the authors use a highly aggregated socio-economic status (SES) indicator that classifies students from schools in the top 40% of the distribution as having a high SES and the remaining 60% as having a low SES. This grouping appears to be too general and a bit discretionary because it does not respond to a real inflection point in income distribution. In fact, the authors do not specify why 40% would be an adequate cut-off point for identifying students with high SES instead of, for example, the 7% of families who form part of the elite and send their children to paid private schools. This cut-off point for identifying the elite could undoubtedly make it more difficult to identify the effect of the SES on income and impact the conclusions reached.

Zimmerman (2016) uses other SES indicators such as having attended a paid private school and finds important effects associated with graduates' SES. This scholar observes that the impact of attending a selective higher education institution strongly benefits elite students and does not

benefit graduates of other types of high schools (e.g. public schools). The explanation is strongly based on the formation of social capital and close connections among members of this select group.

These findings are consistent with those reported by Núñez and Gutiérrez (2004), who determined that graduates from high SES families earn salaries that are approximately 50% higher than those of their peers from more disadvantaged households, once one controls for a series of observable characteristics (gender, experience, academic performance, etc.). While this study is valuable in regard to the methodology utilised, its implications should be judged carefully because it is based on statistical data from a single programme of study in a single university. As such, the results are important but only indicative.

One of the most exhaustive studies conducted in this area in Chile was published in Meller (2010). This research uses very high quality administrative data with broad coverage from *Mi futuro* (previously known as *Futuro Laboral).* The main results include the fact that the programme of study is the most important factor in explaining wage differences among graduates. While the results tend to demonstrate a positive effect of the quality of higher education institutions (using the level of selectiveness as a proxy) on salaries and the likelihood of finding work, this is substantially reduced or even disappears in some programmes when one controls for the students' characteristics such as standardised test scores as a proxy for cognitive ability in each institution. This could show that a part of the salary advantages attributed to more selective institutions are explained by the composition of the student body and not necessarily by greater added value and/or better quality education.

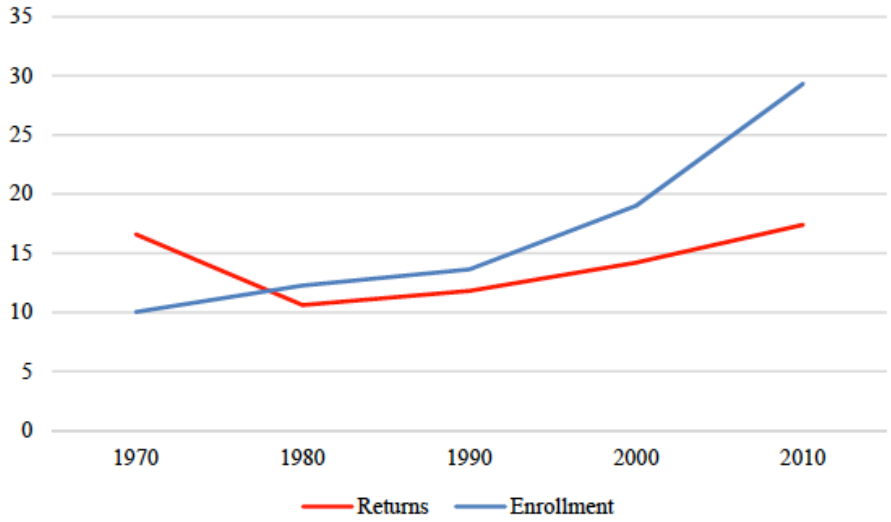
2.3.Returns on higher education: international trends and evidence

Higher education has social and private returns. From a social perspective, its benefits do not only affect graduates, but also indirectly impact society as a whole. The social return on higher education is estimated to be 10.5% in the world on average, 9.7% in high-income countries and 15.5% in Chile (Psacharopoulos and Patrinos, 2018).

On the other hand, from a private or individual perspective, international evidence shows that higher education has an important effect on the likelihood of participating in the labour market, finding a job and obtaining higher salaries (OECD, 2017). According to Ferreyra et al. (2017), the

Mincer wage premium for higher education in Chile is 122% using secondary education as a basis for comparison. That is, an individual who completes tertiary education obtains a wage that is more than double the wage received by a worker who has only completed secondary school. This amount is much higher than those observed in developed countries and is also higher than the average for Latin America, which was 104% in the mid-2010s. This would show the average positive impact on quality of life and opportunities for economic mobility of those who have completed higher education degrees.

Figure 1. Rate of return and higher education enrolment.



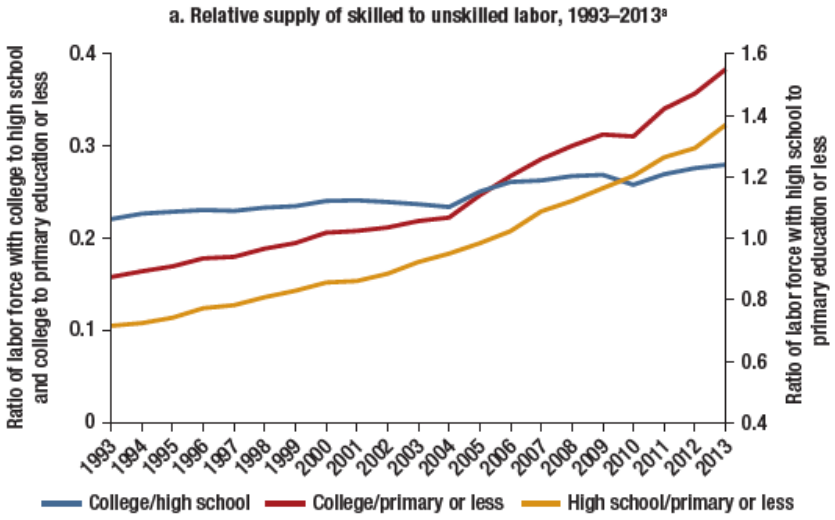
Source: Psacharopoulos and Patrinos (2018).

Based on the systematic review conducted by Psacharopoulos and Patrinos (2018), the private rate of return on higher education has been increasing in the world since the 1980s. These trends are observed despite the fact that global enrolment in this level of studies has tripled since 1970. In this context, the sustained increase of rates of return on tertiary education is due to the fact that the demand for qualified workers, which operates as a complement to the technological changes that affect productive processes, has generally grown faster than the supply (Goldin and Katz, 2010; Psacharopoulos and Patrinos, 2018).

It is important to note that Latin America presents a different and unique evolution. The region has rates of return on higher education that are higher than the global average and among the highest compared to other regions (Montenegro and Patrinos, 2014). However, there has been a slight but persistent decline in the premia on higher education since the 2000s (Messina and Silva, 2018).

This decrease could be explained by the unique increase in the relative supply of qualified professionals in the region, which is not being matched by an equivalent demand in the labour market. This could reflect the limits of the current Latin American economic development model, which is closely linked to the extraction and export of natural resources with very limited added value. The weakness of this model is manifested in its lower capacity to generate jobs that adequately absorb the higher relative supply of qualified professionals (Palma, 2004).

Figure 2. Relative supply of skilled workers in Latin America, 1993 – 2013.



Source: Messina and Silva (2018).

Like the rest of Latin America, the premium of higher education in Chile measured using the Mincer method have steadily declined over the past two decades. Between the beginning of the 2000s and the beginning of the 2010s, the return on higher education in Chile dropped 27 percentage points from 174% to 147%. During the following five years, it dropped another 25 percentage points to 122% (Ferreyra et al., 2017). This the result of a series of factors including the increase in the relative supply of workers with higher levels of education, the stalling of relative demand for highly qualified workers, the lower quality of new institutions of higher education and lower academic preparation of the new segments of students accessing tertiary education (Messina and Silva, 2018).

2.4. The importance of rates of return: impact on poverty and salary inequality

Due to its high returns, higher education is a key factor for escaping poverty. One way of researching this phenomenon is to analyse the percentage of workers who receive a `low wage´ by educational level. Low wages are defined as those that are `insufficient to meet the basic needs of an average-size household without other sources of income´ (UNDP, 2017: 263).

In Chile, this threshold sat just below US$550 per month in 2015 based on an average sized household (Casen, 2015). Using this definition, one can observe that 78.2% of workers who have completed elementary education or received less education than that receive low wages, while this is true for only 7.6% of those who have completed university education. In other words, higher education currently plays a key role in drastically reducing the likelihood of falling into poverty in Chile.

Table 1. Percentage of workers with low salaries.

	Education level					
	None/Primary	Secondary incomplete	Secondary complete	Tertiary (technical degree)	Tertiary (university degree)	Total
Male	73,3	60,5	49,5	27,4	7,3	46,1
Female	87,8	82,6	71,4	41,2	7,9	55,5
Total	78,2	67,8	58,5	34,2	7,6	50,0

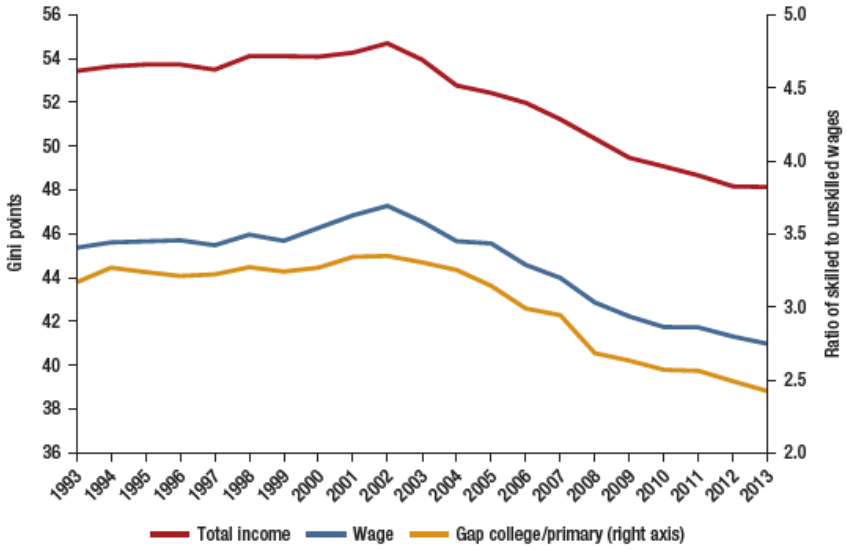
Source: UNDP (2017). Includes salaried workers between the ages of 18 and 65 who work 30 or more hours per week.

On the other hand, returns on higher education play a key role in determining wage inequality. One of the main factors that impacts this is the distribution of hourly pay of different jobs within the economy. This distribution is strongly impacted by the educational level required to execute available jobs and the economic returns associated with each level of training. Therefore, one can state that wage inequities are strongly but not exclusively linked to that which occurs with returns on education.

In Latin America, there is a significant correlation (0.63) between the changes observed in the premium of higher education and variations in wage inequality (Messina and Silva, 2018). As Figure 3 demonstrates, wage and income inequities tend to vary consistently with the shifts in the

premia of higher education. In fact, this would partially explain the decline in inequality observed in the region since the early 2000s.

Figure 3. Income and wage inequality (Gini) and the premium of higher education in Latin America, 1993-2013.



Source: Messina and Silva (2018).

Similar to the regional trend, wage inequality in Chile experienced a strong decrease beginning in the early 2000s, mainly linked to the reduction of the wage premia for higher education as a result of the increased relative supply of qualified workers (UNDP, 2017). The Latin American regional evidence thus shows that the observable variables that have traditionally been included in the econometric models (education, experience, gender, location, etc.) explain approximately 40% of the variance of wage inequality. The education variable explains 70% within this partial percentage. In other words, the educational level explains a little over one-fourth of the total variance of wage gaps (Messina and Silva, 2018).

While this evidence allows us to highlight the relative importance of education, it is also a source of concern given that 60% of wage inequalities are not explained by the variables that are traditionally included in the models. Moreover, three quarters of the variance in wage inequality in the countries of the region are explained by variables other than education. The regional results are consistent with those observed for Chile. This research also shows that education gaps among

individuals, while key, explain less than half of the wage gaps observed in the country (Contreras and Gallegos, 2011).

Based on this evidence, one can state that the capacity of the existing models is limited in regard to explaining most of the inequities observed. It is therefore urgent that we arrive at a better understanding of those gaps, analysing dimensions that have not been studied as carefully thus far. On the one hand, areas linked to the impact of the configuration of educational, productive, tax, labour and social security systems do not only influence wage gaps but also shape income gaps. On the other hand, research must be conducted to elucidate the impact of the type and quality of education received (and not just the level) and the socio-economic origin and social capital of individuals on the type of labour insertion, heterogeneity of economic returns, and the quality of the jobs that are accessed. Analysing these variables in detail will enrich the models used and deepen our understanding of the underlying causes of the dispersion and inequality among individuals.

This second group of variables (i.e. impact of quality of institutions and social origin) is the focus of this research.

3. The Chilean context: Setting the stage

3.1. The transition to higher education: unequal flows

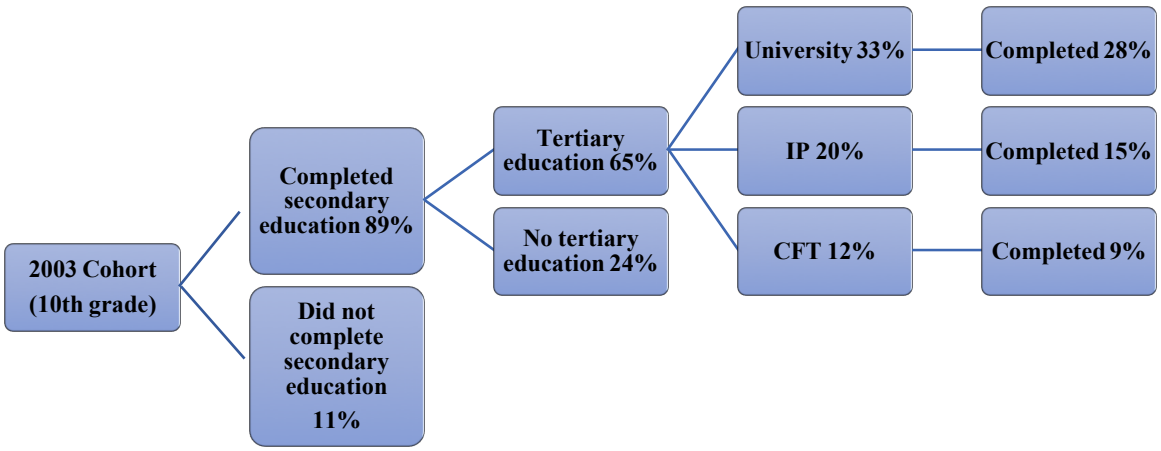
Researchers usually tend to analyse the strengths and weaknesses of higher education from a regulatory and funding perspective. Less frequently is the system examined from the perspective of the young individuals who move through them. This section seeks to do just that by briefly describing the educational trajectories of Chilean students starting in secondary school, moving through higher education and until they join the job market. Special emphasis is placed on the divergent paths that young people from different social backgrounds follow, in order to provide a general framework or prelude that elucidates what this study explores later on in greater detail.

Analysing higher education in Chile from a lifecycle perspective or based on the trajectory followed by young people shows that the transition from secondary education to tertiary education is a difficult one, is differentiated and is characterised by obstacles that not every student manages to overcome. A UNDP (2017) study allows us to indirectly observe the obstacles that young people

face in each transition. This research uses administrative data from the Ministry of Education of Chile to analyse the enrolment flow of a cohort of 224,622 students enrolled in high school (Grade 10) in 2003. The data show that only 89% of them manage to complete high school, while 11% do not complete this level. Only 65% of the original cohort enrolled in higher education. This means that 35% do not complete their secondary studies or simply decide to join the labour market.

Of those who enrol in higher education, 33% of the initial cohort went to a university, 20% went to a Professional Institute (IP in Spanish) and 12% attended a Technical Training Centre (CFT in Spanish). Finally, only 28%, 15% and 9% of the cohort successfully completed their programme of study at the university, IP or CFT, respectively. In short, of the 100% of students enrolled in high school in 2003, 52% managed to complete their studies at higher education. The remaining 48% did not achieve to do so (Figure 4).

Figure 4. Pathway of a cohort of high school students in Chile.

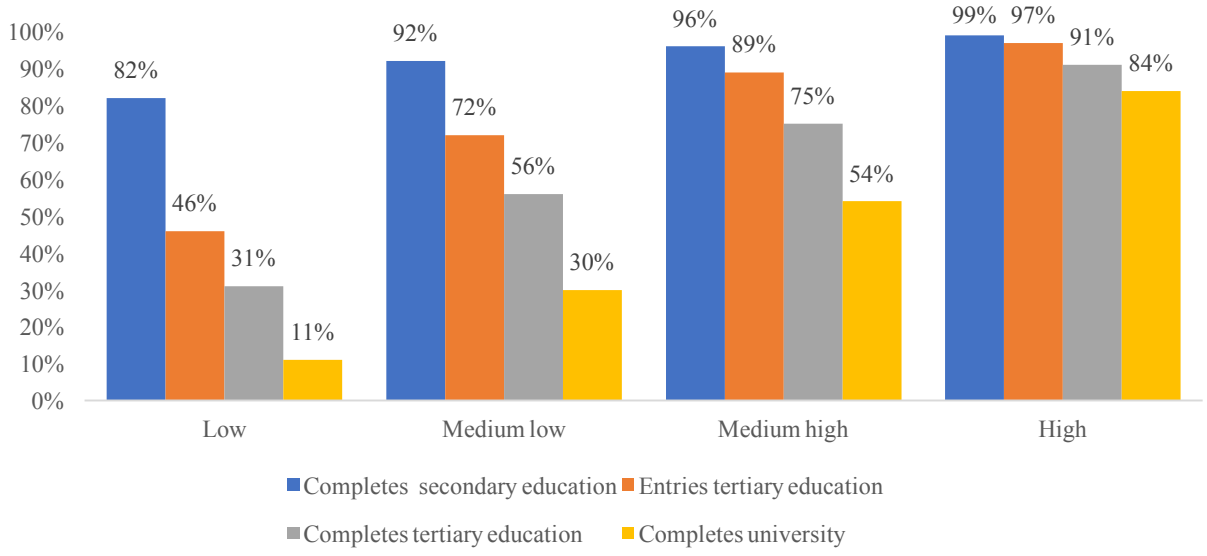


Source: UNDP (2017).

However, as we can see in Figure 5, the flow of students through the educational levels is not homogeneous. Rather, it varies substantially according to the socio-economic status of the family of origin. Various factors such as insufficient academic preparation, economic problems that make it difficult to cover educational costs, and limited vocational guidance to increase students' expectations negatively impact access to higher education and the ability of these students to remain in their programmes.

As the presented data suggest, an important problem in the Chilean higher education system is the deficient capacity to guide and support young people through it. The retention rate for the first year is 74% (SIES, 2018), though this varies by type of programme of study and each higher education institution's accreditation level. The retention rate increases to 78% in professional programmes and drops to 69.3% in technical programmes, which have a high concentration of young people from low income families. While the retention rates for the first year are 79.7% for accredited universities, 73.3% for professional institutes and 69.9% for technical training centres, those rates drop to 61.1%, 56.6% and 56.9%, respectively, in unaccredited institutions (SIES, 2018).

Figure 5. Trajectory of a cohort of students in Chile by family socio-economic status (%).



Source: UNDP (2017)

3.2.Educational trajectories: differentiated access

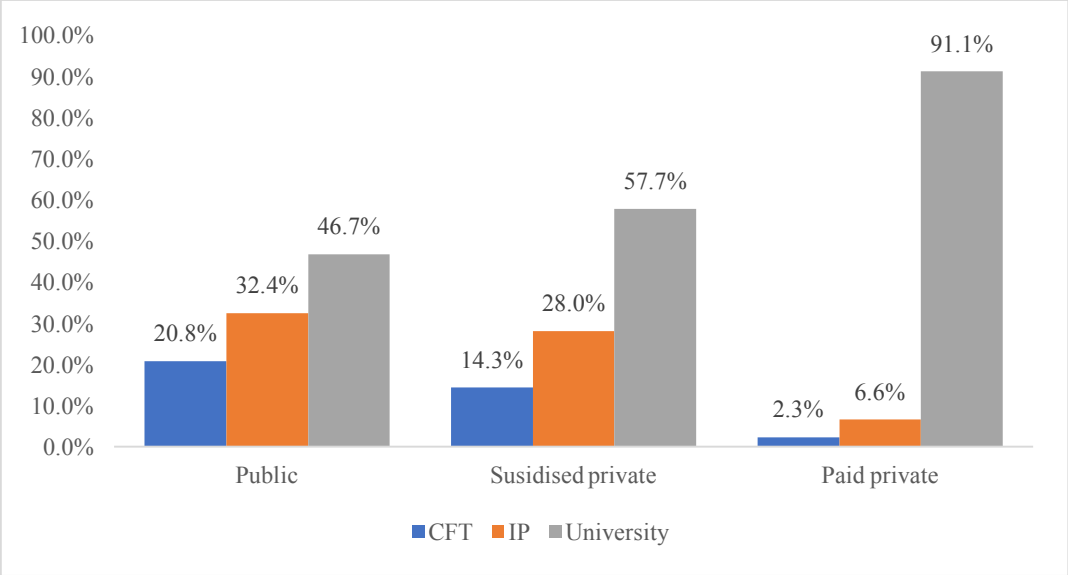
The educational trajectories of young people show that their access, progress and completion rates of the programmes of study are not only unequal, but are also differentiated based on the quality, prestige and type of the institutions and programmes that each social group accesses. The Chilean system is composed of approximately 150 institutions of higher education that are markedly differentiated both horizontally and vertically.

From the vertical perspective, there are three categories of institutions, as we have already mentioned: universities, professional institutes and technical training centres. The first are the only ones authorised to grant undergraduate degrees (bachelor´s degree) and postgraduate degrees, including master's degrees and doctorates. The second are authorised to grant professional titles (lower than bachelor equivalent) and higher level technical certificates. Technical training centres can only grant higher level technical certificates.

While the vertical hierarchy of the system in itself should not cause inequalities, in practice the problem arises due to the emergence of differentiated trajectories based on students' socio-economic status. As a result, in the Chilean case, social prestige tends to be higher for universities and lower for IPs and CFTs (Brunner, 2009).

This is reflected in the fact that access to each type of higher education institution and programme of study varies substantially by the type of secondary school of origin. As Figure 6 shows, students who graduate from public schools – who mainly come from lower income families- tend to enrol (53.2%) in technical institutions (IP and CFT), while the great majority (91.1%) of those who graduate from paid private schools –who come from social advantaged families- attend universities. Only a minority of the latter (8.9%) end up studying at a technical institution (IP and CFT).

Figure 6. Destination of the student cohort who graduated from high school in 2016 by higher education institution of destination and type of school of origin.



Source: SIES, 2016.

The system is also profoundly differentiated from a horizontal perspective. An objective metric that allows us to analyse this phenomenon is the level of quality-accreditation obtained by each type of higher education institution. As Table 2 shows, while all of the universities that form part of the Council of Rectors of Chilean Universities (Consejo de Rectores de las Universidades Chilenas, CRUCH)[52] have institutional accreditation, only 61% of private universities have this seal of quality. Meanwhile, only 58% of IPs and 53% of CFTs are accredited.

Table 2. Level of institutional accreditation in higher education, 2014.

Type of Higher Education Institution	Percentage of Accredited Institutions
CRUCH State Universities	100%
CRUCH Private Universities	100%
Private Universities	61%
Professional Institutes	58%
Technical Training Centres	53%
Total	84%

Source: Developed by the author based on SIES (2014).

It must be said that the three latter category of institutions - private (non-Cruch), IP and CFT- emerged as a consequence of the 1980s reform under the Pinochet dictatorship and Chicago Boys ideological doctrine of promoting unregulated markets in every sphere of society, including the higher education sector. This has resulted in an enormous horizontal differentiation and a great variety of institutions of different quality levels. This outcome should not be surprising, on the contrary, it is a foreseen consequence of the policy and political decisions made during the 80s. This institutional differentiation has had of course effects on the resulting education and labour trajectories.

[52] This council comprises all private and public universities existing before the 1981 reform.

Furthermore, institutional accreditation in Chile is not a dichotomous certification (accredited/unaccredited). Instead, it is expressed in the number of years of accreditation (being seven the highest possible level of accreditation). While it does not seek to do so explicitly, this reflects the strength and quality of the institutions of higher education. From this perspective, it is important to analyse the distribution of the student enrolment among the various higher education institutions based on the accreditation level and the type of student that accesses them. As Table 3 shows, the system's social stratification is evident. For example, 50.2% of students enrolled in institutions with the highest level of accreditation come from paid private high schools even though this group represents only around 7% of the enrolment in the Chilean school system. Meanwhile, students from public high schools represent 51.1% of enrolment of higher education institutions without institutional accreditation.

Table 3. Distribution of university enrolment by level of institutional accreditation and secondary school of origin.

High school of origin	Years of accreditation of the higher education institution		
	Unaccredited	4 years	7 years (maximum)
Paid private	2.8%	6.2%	50.2%
Subsidised private	46%	59.7%	29.7%
Public	51.1%	34.2%	20.1%
Total	100%	100%	100%

Source: Developed by the author based on BCN (2014).

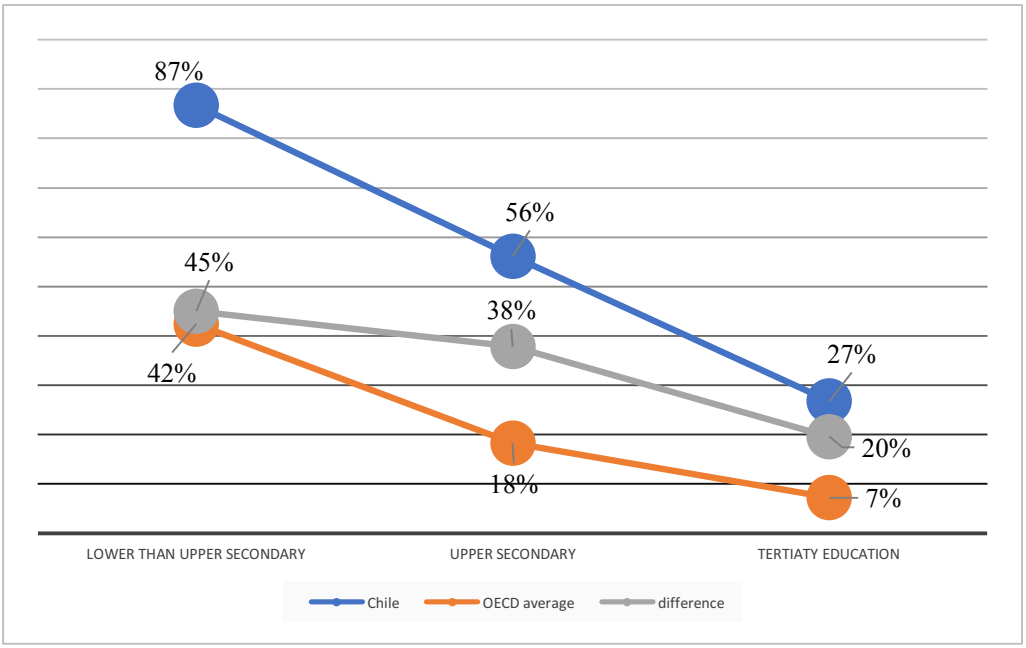
In short, those who manage to enrol in institutions with more years of accreditation mainly come from paid private high schools and families with high socio-economic status because they have the academic preparation and financial resources to do so. Those from socio-economically less advantaged families and public schools tend to enrol in unaccredited institutions or those with low levels of accreditation because the academic requirements and fees are generally lower (Brunner, 2009). As a result, the differences in the quality of the institutions to which each group accesses

end up being reflected in differentiated learning opportunities and subsequently in the differentiated trajectories in the labour market (as shown in the next sections of this report).

3.3.The benefits of higher education: acquisition of knowledge and skills

It is possible to assess the higher education system based on the quality of its graduates. From this perspective the results are mixed. On the one hand, the system presents very deficient and disappointing results in regard to its ability to train professionals and technicians in the basic abilities and skills demanded by the labour market and the 21st century society. Based on PIACC results[53], it is possible to observe that the maths, reading, writing, and problem-solving skills of higher education graduates in Chile are much lower than those of the OECD countries.

Figure 7. Percentage of adults (ages 25-65) under PIACC Level 2 in reading and writing by educational attainment.



Source: Developed by the author based on the 2015 PIACC database, OECD (2016).

[53] The Programme for the International Assessment of Adult Competencies (PIAAC) is an assessment conducted by the OECD in order to assess the competencies of the adult population in the areas of reading and writing, arithmatic and problem solving.

For example, the percentage of the adult population between the ages of 25 and 65 that has completed higher education and manages to reach the highest PIACC levels (4 and 5) in reading and writing skills is only 4.8% compared to the average of 20.9% of OECD countries. On the other hand, as Figure 7 demonstrates 27% of Chileans who have completed higher education have a low level of skills based on PIACC results, compared to the average of 7% for OECD countries. This allows us to state unequivocally that the quality of the educational system is low from an international perspective even for those who complete tertiary education (professional and technical).

This is partially due to low curricular relevance and the use of traditional pedagogical practices that do not emphasise the development of 21st century skills. This is also consistent with the fact that only a small percentage of higher education programmes of study have been accredited by the National Accreditation Commission (Comisión Nacional de Acreditación, CNA). In fact, it is important to note that only 28% of the approximately 18,000 undergraduate programmes of study offered by higher education institutions are accredited. In other words, two-thirds of the programmes of study do not possess a seal of quality (SIES, 2014).

The above notwithstanding, from the perspective of the added value generated by higher education in Chile, it is possible to observe that it does have an important effect on the acquisition of skills by graduates. The differences are significant when we compare the reading, writing, math, and problem-solving skills of adults who have completed higher education with those who have only completed high school or have a partial high school education. While it is not possible to conduct a rigorous direct comparison between these groups, since they are probably composed by individuals with diverse observable and unobservable characteristics, this suggests that higher education in Chile partially functions as a skill levelling instrument. While this effect is not sufficient to compensate for the deficits of the school system as a whole (from early childhood education to upper secondary), this reflects the relevant level of value added by higher education in Chile.

Furthermore, from a comparative international perspective, it is possible to observe that the competency gap between the Chilean population and that of OECD countries is strongly reduced when comparing individuals with higher educational levels (Figure 7). In fact, the greatest reduction in performance gaps between Chile and the OECD is produced when transiting from

complete high school to higher education. This mechanism partially compensates for the quality deficits that are carried forward from the school system.

3.4.The benefits of higher education: wages in the labour market

Higher education in Chile has a significant capacity to increase graduates' wage prospects. Even at the comparative level, the evidence shows that higher education in Chile generates a wage premium relative to high school that is substantially greater than the average observed in the OECD (2018).

However, the greatest benefit is obtained by those who pursue and complete university degrees (ISCED 5A). Table 4 shows that graduates holding a university bachelor´s degree in Chile receive salaries that are 163% higher than those of upper secondary graduates. However, this reward is only 40% for technicians and professionals from CFT and IP (ISCED 5B). At the OECD level, by contrast, the relationship between university graduates and vocational programmes graduates tends to be more equitable. Technicians and professionals from CFT and IP equivalents receive a wage premium equivalent to 20% while that of university graduates is 44%, on average.

Table 4. Wages relative to workers with high school diploma (2017).

	Wage premium for higher education (upper secondary education wage = 100)	
	Graduates from IP and CFT (ISCED 5B –VET Programmes)	University graduates (ISCED 5A – Bachelor´s degrees)
Chile	140	263
OECD	120	144

Source: Developed by the author based on OECD (2019).

While those who study technical programmes receive on average a lower salary than those who complete professional programmes, this relationship is not always stable. Intersections emerge from a detailed analysis of the economic returns of the various programmes within each educational level. For example, the best paid graduates from technical programmes –located in the top 20% of the distribution of those programmes- obtain higher salaries on average, than university

graduates who studied in programmes located in the lower 20% of the distribution of that group (SIES, 2014).

This heterogeneity is not only observed at the level of gross wages by programme of study, but also when considering the internal rate of return (IRR), which, among other variables, also considers the direct and indirect cost of attending college (Ferreyra et al. 2017). As Table 5 shows, returns vary significantly based on the type of higher education institution and area of study.

Table 5. Internal Rate of Return (IRR) on higher education in Chile by area of study and type of higher education institution.

Percent

	Type of HEI			
	Technical training centers (two-year degrees)	*Professional institutes (four-year degrees)*	*Universities (five-year degrees)*	*Overall*
Agriculture	35.3	42.5	62.7	52.5
Arts	66.1	31.0	49.0	41.2
Business management	57.1	54.6	126.8	78.2
Education	–2.4	9.5	12.7	9.6
Engineering and technology	109.6	99.8	163.5	125.8
Health	40.5	40.9	101.5	73.3
Humanities	–5.2	12.1	2.3	4.1
Law	61.3	38.6	128.5	115.1
Science	97.2	115.5	115.3	113.6
Social Sciences	34.5	18.7	47.0	36.2
Total	66.2	58.9	97.5	78.4

Source: Espinoza and Urzúa (2016).

Once again, these finding show that those who access university bachelor´s degrees tend to obtain greater returns. While the average return on a university degree is 97.5%, the return on professional programmes offered by professional institutes (IP) is 58.9% and the return for technical degree offered by technical training centres (CFT) is 66.2% on average.

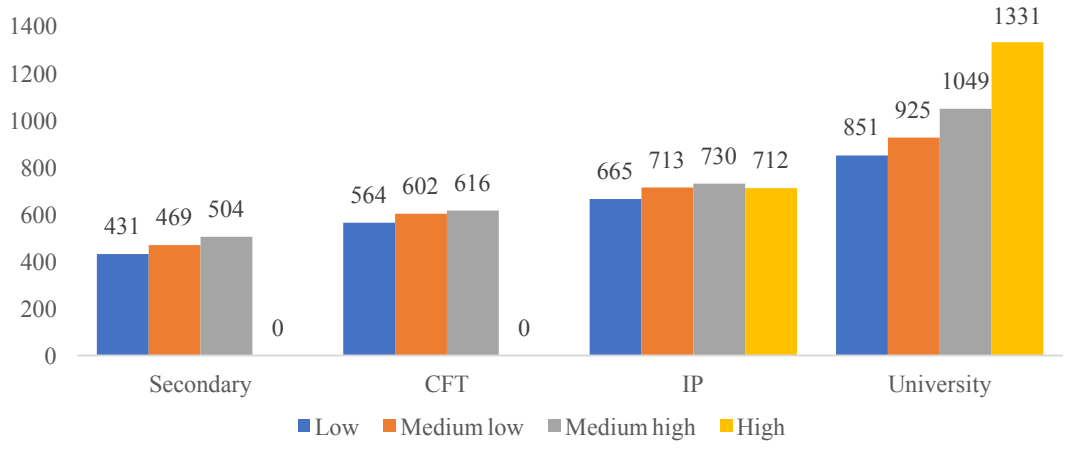
At the same time, the return on higher education mainly varies by area of study. While university programmes in engineering, law, and administration and business have returns of over 125%, the returns for areas such as education and the humanities are less than 15%.

The data also show that the returns increase with the number of years of accreditation of the higher education institution, but only for universities (no effects are observed for technical training

centres and professional institutes). In the case of universities, individuals who enrol in an accredited institution obtain an advantage and receive an incremental return equivalent to 13 percentage points for each additional year of institutional accreditation (Ferreyra et al., 2017).

Finally, as this research more fully explores in the next sections, wages in the labour market tend to vary based on the graduate's social origin, even among those who have equivalent educational levels. The data provided by UNDP (2017) show that the weight of social class persists and is especially significant among university graduates (Figure 7).

Figure 7. Labour income (*) for individuals (ages 25 – 28) by educational level individuals and family socio-economic status.



Source: UNDP (2017). (*) In thousands. The used currency is Chilean pesos.

In view of these inequalities, it is worth reflecting on the causes of this phenomenon, which hinder social mobility and the "equalising" promise of higher education. Part of the explanation is the different educational trajectories of each social group, which have been briefly described in this section. These are characterised by an unequal and differentiated access to higher education in regard to the type of programme of study and quality of the higher education institution. Therefore, part of the explanation lays in the indirect effect of the family's socio-economic status on the quantity, type and quality of the education attained by descendants.

However, inequalities are also probably due to the direct influence of social origin on the labour insertion process driven by the greater social capital of advantaged parents. Additionally, inequalities seem to be also related to social discrimination in the labour market itself. According

to UNDP (2017), the wage gaps among social groups are due to `the differentiated appraisal made by employers, especially when considering high positions. In the case of high-ranking executives, graduates from elite paid private secondary schools due to supposed cultural advantages and because they have a larger network´ (UNDP, 2017: 313).

A combination of these and other factors undoubtedly comprise the underlying causes of the inequities observed. These inequalities may be able to explain the fact that 7% of Chilean graduates obtain a negative return on higher education. Although hypothetically this could be considered a small proportion, it should raise serious concerns, since it is a phenomenon that mainly impacts graduates from technical training centres (CFT) and professional institutions (IP), and that three out of every four of these graduates are originally from a lower socio-economic status (Ferreyra et al. 2017).

The research available to date in Chile and Latin America undoubtedly represents an important progress. However, there has been a tendency to study these issues partially, which goes against a holistic understanding of these educational/labour phenomena. As a result, it is difficult to understand the relative weight of each one of these explanatory factors- social origin, social capital, labour discrimination, type and quality of institution, programme of study, etc.- on individuals' labour pathways.

Moreover, and beyond the explanatory factors, most studies have only analysed the economic returns on higher education. As a result, there is an urgent need to expand our understanding of labour trajectories –as a dependent variable- beyond wage differences. Fundamental new and old pending questions to be addressed include: What are the differences in job satisfaction of the different groups of graduates? What disparities exist in regard to the quality of the jobs that they obtain? What differences emerge when we analyse the occupational status and hierarchical position that they achieved within the organisations in which they work? What is the subjective perception of graduates regarding their own social mobility? Most importantly, is the higher education system, as a social institution, able to equalise opportunities? Do social groups converge or diverge at the end?

There is a need to deepen and broaden the way in which labour trajectories and social mobility are examined and conceptualised. Only then can we clearly understand the real effects of higher

education, including both its fulfilled promises and those that have been left unmet. This is exactly the aim of the study presented in the following sections.

4. Methodological Approach

4.1.Main objectives.

In order to contribute to a better understanding of the processes involved in social mobility, this study examines the role of the higher education system on the labour trajectories of its graduates. Specifically, on the one hand, this study aims to understand the relevance of the socio-economic origin and levels of social capital of individuals, and on the other hand, the effect of the diverse qualities of higher education institutions, on job search strategies, the level of wages, the quality of employment and the process of social mobility experienced by graduates.

This study does not aim to investigate the absolute effect of higher education, that is, does not seek to compare individuals who attend higher education with those who do not (e.g. high school graduates). It rather tries to unravel its differentiated effect on those who study and graduate from it – i.e. among those who hypothetically succeed- mainly, according to the quality of the institution of higher education and the socio-economic status of origin of individuals. These two dimensions are key as explanatory variables, since they reflect issues related to, on the one hand, educational opportunities and prevailing social norms and discrimination levels in the labour market (social class), and on the other hand, institutional effects due to the horizontal differentiation that has been fuelled by the unfettered `higher educational market´ established since the 1980s.

For this purpose, the analysis of the Chilean higher education system is an interesting case study that should provide valuable lessons to other countries in the region. Its rapid and extensive expansion during the last decades has been characterised by a clear vertical and horizontal differentiation, with a growing presence of providers with different levels of quality, which has generated a strong debate regarding the relative impact of these institutions on the labour trajectories of its graduates. With the hope of contributing to this debate and the reforms underway, the following sections of this study provide unprecedented evidence.

4.2. Questionnaire.

This study took a quantitative approach to address the proposed problem. It developed a questionnaire that was designed especially for this research. The questionnaire was applied face-to-face and took an average of 55 minutes to complete. It was composed of 141 questions and scales on various topics that allowed obtaining detailed information on the following aspects:

Table 6. Questionnaire: Areas and topics

Main areas of the questionnaire
1. Socio-demographic information: gender, age, marital status, ethnic origin, among other variables
2. Socio-economic origin: education and occupation of parents, among other variables
3. Educational background of graduates: educational trajectory in primary, secondary and tertiary
4. Education satisfaction: satisfaction of graduate with different aspects of their institution of higher education
5. Non-cognitive skills: social skills and self-efficacy
6. A detailed map of social networks and their use for job search
7. Insertion in the labour market: job search mechanisms and time required to secure first job
8. A detailed description of the respondent's first job
9. Unemployment history
10. Goals and factors of success
11. Detailed description of the current occupation
12. Connection between education and current position
13. Experiences being subjected to discrimination in the labour market
14. Quality of first and current job: subjective and objective detailed measurements
15. Perception of social mobility

Source: Developed by the author.

4.3. Sample of institutions and graduates.

The study focuses on individuals who graduated from institutions of higher education in 2006, 2007 and 2008. As such, it covers professionals who have been in the labour market for approximately eight to ten years. This timeframe ensures that the graduates reach "occupational maturity" (the point at which trajectories tend to stabilise), allowing for adequate measurement of their occupational trajectory and status in the labour market (Bbukodi and Goldthorpe, 2011).

The sample of 1,332 graduates comes from six universities in Santiago de Chile. The focus on the Metropolitan Region institutions is based on the fact that the labour market conditions vary considerably from region to region. As such, analysing graduates exposed to a single labour market ensures greater comparability.

For each level, the institutions selected vary based on their academic quality, that is, based on the years of institutional accreditation granted by the National Accreditation Council (Consejo Nacional de Acreditación, CNA). According to this criterion, the following distribution of institutions was included:

Table 7. Sample of institutions included in the study.

	High-Quality Institutions [1]	Medium-Quality Institutions [2]	Low-Quality Institutions [3]	Total Number of Institutions
Universities	2	3	1	6

Source: Developed by the author based on information from the CNA (years 2004-2008, depending on the institution). [54]

As shown in previous sections, it is important to note that the Chilean higher education system is highly stratified and that there is thus a high correlation between the quality of the institutions and the average socio-economic origin of the students enrolled.

An alternative strategy for analysing the academic quality of the institutions included in the sample involved examining their institutional prestige and level of selectivity. The latter is measured in terms of the percentage of highest performing secondary students enrolled in a given higher education institution, based on their university admissions test score (Prueba de Selección

[54] (1) 6 -7 years of accreditation; (2) 3-5 years of accreditation; (3) 2 or less years of accreditation.

Universitaria, PSU). Based on 2005 data presented in Brunner and Uribe (2007), which is limited to universities, the institutions selected in this study are categorised as follows:

Table 8. Sample of universities by level of selectiveness

	Highly selective institutions[1]	Moderately selective institutions[2]	Non-selective institutions[3]	Total number of institutions
Universities	2	2	2	6

Source: Developed by the author based on Brunner and Uribe (2007).[55]

As the tables above show, the institutions included in the sample adequately reflect the diversity within the Chilean higher education system.

The sample framework of the study consists of individuals who have graduated from the following university programmes: law, business, pedagogy and psychology. These programmes were selected because they have the highest number of enrolled students in the Chilean higher education system and because they are offered at most of the universities in the sample.

As a result of the criteria utilised, the universe of graduates that meets all of the criteria and contains the socio-economic data necessary to be included in the sample framework totals 5,382.

4.4.Sampling method.

Using the sample framework described, a disproportionate stratified sample was generated based on institutions, programmes of study and graduates' socio-economic status. This technique allows groups that would otherwise be difficult to capture (i.e. poorer students in elite universities) to be oversampled in order to ensure an adequate number of individuals in each sub-stratum and obtain enough cases for the statistical analyses that contrast different groups. For the purposes of this

[55] (1) Over 80% of all enrolled students per year meet high performance criteria; (2) between 35% and 65% of all enrolled students per year meet high performance criteria; (3) less than 35% of all enrolled students per year meet high performance criteria.

study, a disproportionate stratified sample is superior to a simple random sample. However, the first is more difficult to obtain and requires a longer period of field work.[56]

The sample has been stratified with the intention of including a significant number of students of high, medium and low socio-economic origin in each one of the programme-institution segments. The socio-economic data from the 2002 National Census has been used to classify each student based on their home address at the time that they were enrolled in higher education. This classification was later corrected and updated using the information provided in the survey by each individual.

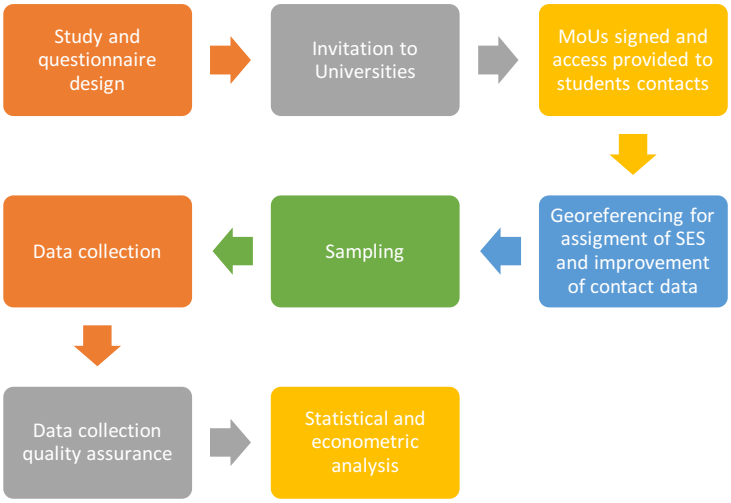
4.5. Data collection and elaboration process.

The ambitious and complex data collection and research process took 2 years to be successfully completed and entailed the setting up of a call centre and more than 30 part-time pollsters based at the Pontificia Universidad Católica de Chile and Statcom[57]. The study design, data collection, and analysis process included the following stages:

[56] In short, the sample was designed to provide an adequate level of contrast between socio-economic groups based on the different types of institutions of higher education and programmes of study, which is the goal of the study. It is important to consider the fact that a disproportionate stratified sample does not seek to be representative. However, it is preferable to a random representative sample because the latter does not ensure a sufficient number of individuals for each sub-stratum. Using it would make it difficult to reach the objective of the study in terms of its capacity to answer the proposed research questions.

[57] In order to carry out this study the author received the generous donations of Pontificia Universidad Católica de Chile, Universidad Diego Portales and INACAP. Additionally, parts of the costs were covered through a contract between the author and the World Bank, in return for a publication in this critical matter for the region. This study was designed and led by the author, with research assistance (collaboration) for fieldwork coordination and parts of the statistical analysis sections.

Figure 8. Stages of the research project.



Source: Author´s own elaboration

To the best of our knowledge, the resulting dataset is the most complete and detailed source of its kind currently available in Chile and Latin America.

4.6. Novel contributions of this investigation.

This study is distinctive, and represents a significant and novel contribution to the existing evidence in Chile and in Latin America for various reasons. First, in general, the data used in previous studies does not econometrically allow controlling simultaneously for the socio-economic status of graduates, and the quality of institutions/programmes of study, which could substantially bias the results, since the poorest individuals usually enrol in low-quality institutions. Therefore, their lower returns could be an outcome resulting from a combination of effects (lower cultural capital and lower institutional quality). Second, the studies carried out to this date in the region do not adequately examine the role played by the level of social capital of graduates in the job search process. However, the evidence shows that those who use personal contacts when searching for a job are more effective in achieving their goal and tend to reach higher-paid positions, with higher social status (Lin, 2001). Third, the previous studies do not consider a set of important employment dimensions to be analysed, such as: the level of job satisfaction, the quality of employment, the coherence between the degree subject and the current occupation, and the occupational status and hierarchical location that graduates occupy within the organization where

they work. These indicators are key because they allow understanding in greater depth the phenomenon of social mobility and its relationship with higher education.

Finally, most studies assess the situation of individuals on the first, or up to the fourth year, after graduating from higher education. This study, however, makes a special effort to collect information and analyse the labour trajectory of graduates almost a decade after graduation, when individuals approach their occupational maturity, and therefore it is possible to observe more stable and definite inequalities between the different segments of graduates.

These challenges are precisely those which this research project tackles, focusing on the Chilean case. It hopes to contribute evidence from Latin America to a debate historically dominated by research carried out in developed countries. It is expected, then, that the lessons learned from this case study, may be potentially useful for other countries that have educational systems with a similar level of development.

5. Main results.

5.1. Social characterisation of graduates: inquiring into unequal origins.

The first part of the study explores the socio-economic origin of the individuals that constitute the focus of this study. This allows a better understanding of the background of graduates and the way in which they are distributed among the different higher education institutions, according to their level of academic selectivity.

To analyse the sample for this study, different indicators of social origin are examined. These seek to reflect the different degrees of access to opportunities and to different types of capitals (economic, cultural, social and symbolic) by the interviewees during their adolescence.

First, the sample is examined using the EGP social class scheme (Erikson, Goldthorpe & Portocarero, 1979; Erikson & Goldthorpe, 1992). This classification is based on the occupation of individuals. Therefore, it was necessary to collect specific information, through the applied questionnaire, which allowed to classify the graduates and their parents in one of the categories established in the International Standard Classification of Occupations (ISCO-08), developed by

the International Labour Organisation (ILO, 2012). For these purposes, on the basis of retrospective questions, the occupation of the parents is analysed when the interviewees were 14 years old, i.e. when most parents had already reached their occupational maturity (Goldthorpe, 1980).

Social Class Scheme	
I	Higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors
II	Lower-grade professionals, administrators and officials; higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees
IIIa	Routine non-manual employees, higher grade (administration and commerce)
IIIb	Routine non-manual employees, lower grade (sales and services)
IVa	Small proprietors, artisans, etc., with employees
IVb	Small proprietors, artisans, etc., without employees
IVc	Farmers and smallholders; other self-employed workers in primary production
V	Lower-grade technicians; supervisors of manual workers
VI	Skilled manual workers
VIIa	Semi-and unskilled manual workers (not in agriculture, etc.)
VIIb	Agricultural and other workers in primary production

Source: Erickson and Goldthorpe (1992).

Second, the sample is scrutinised according to the educational level of the parents. The average years of education are analysed, as well as the last level of education attained by parents. In general, the analyses are made using the education of the mother, since it proves to be the strongest predictor of subsequent inequalities.

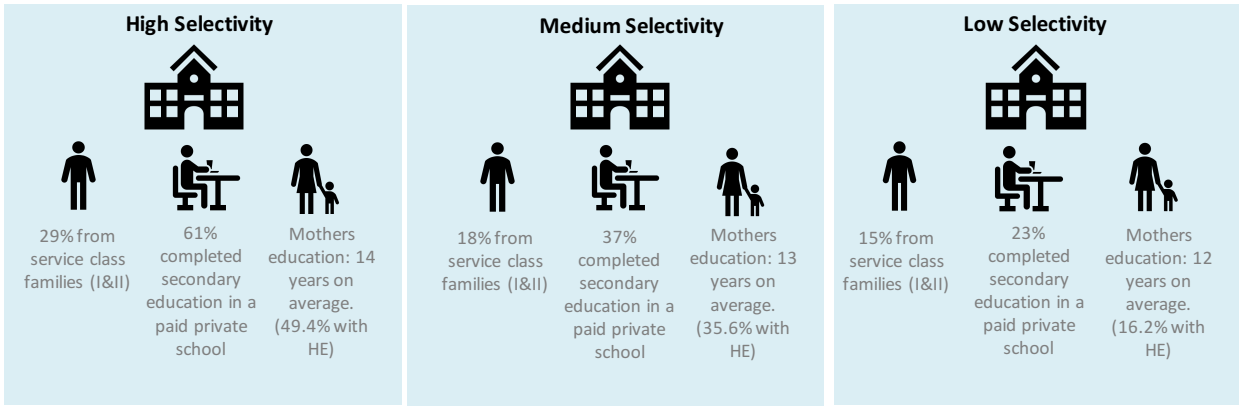
Finally, type of school in which the interviewee completed his secondary education is also reviewed. In Chile there are three types of schools: municipal/public, private subsidised and

independent paid private. Because the type of school attended by individuals is strongly conditioned by the families' ability to pay, the municipal schools concentrate a large part of the students from low-socio-economic status, the subsidized private individuals from middle class, and the paid private specially gather families from advantaged backgrounds (García-Huidobro, 2007; Mizala & Romaguera, 2001).

The collected data in the study shows that the higher education system is segregated according to social class and academic selectivity. Institutions with high degrees of selectivity have greater concentration of graduates from higher social classes, while institutions with low and medium degrees of selectivity show the opposite situation. However, the data show that the latter institutions have greater socio-economic diversity in their classrooms.

In many cases, graduates from low and medium selectivity institutions tend to have comparable socio-economic characteristics. However, it is mainly the graduates of low selectivity institutions that come from more disadvantaged contexts. These universities have a high percentage of individuals who are the first generation in their family participating in higher education. Moreover, most of them completed their secondary studies in public schools (Figure 9).

Figure 9. Socio-cultural segregation of the Chilean higher education system: characteristics of graduates, by type of HEI.



Source: Author´s own elaboration

In summary, the collected data show that the Chilean higher education system is sorted simultaneously and hierarchically, according to the quality of educational institutions, and the social origin and academic performance of students. Those who access high selectivity institutions

have more advantaged social origins. They also come, in general, from independent private schools and had a higher academic performance in secondary education. On the other hand, those who graduate from low quality universities come from families of lower socio-economic status, public schools and had a lower academic performance in secondary education. This sorting process generates a strong social, educational and cultural segregation. Moreover, this segregation is observed and verified independently of the indicator used in the analysis: occupational class of the head of household, education attainment of parents or type of school in secondary education, as shown in figure 9.

5.2.Higher education: diversity of approaches and formative experiences.

The study also briefly portrays the educational trajectory of graduates from secondary to higher education. This analysis yields interesting results. On the one hand, there are important differences in the entry age of individuals to higher education, depending on the level of selectivity. While in less selective institutions the average age of entry 21 years old, in institutions with medium and high selectivity levels it reached 19.1 and 18.7 years old, respectively. Additionally, the average time-to-degree (time required to graduate) is higher in low selectivity universities. Therefore, students in low-selectivity institutions enter later to higher education institutions and take longer to graduate.

The curricular emphasis of institutions also varies according to the level of selectivity. In general, high-selectivity universities emphasise theoretical knowledge, critical thinking and responsibility. In contrast, low-selectivity institutions place greater emphasis on practical learning.

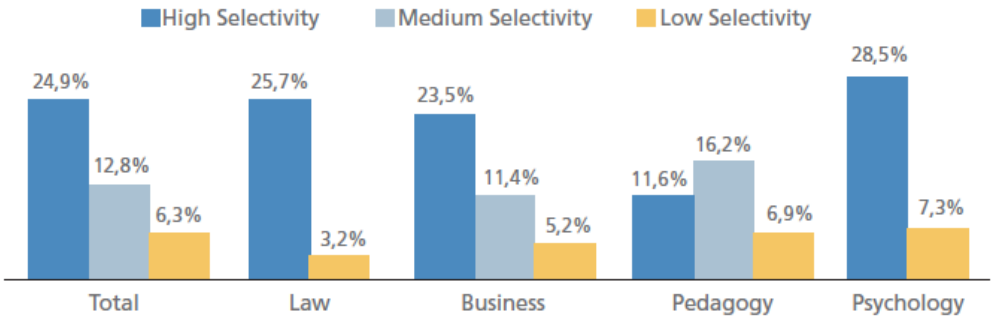
Figure 10. Curricular emphasis of institutions, by selectiveness (% of students that agree to the statement that their coursework focused on…).

Source: Author´s own elaboration

This could empirically prove the existence of some type of hidden curriculum, as put forward by Bowles and Gintis (1975). Indeed, while 59% of graduates from highly selective institutions agree that the curricular emphasis of their coursework was focused on theoretical knowledge and abstract concepts, only 23% of those from less selective institutions agreed with that statement.

Additionally, the evidence shows that after graduating from an undergraduate degree, only 17.8% of the sample enrolled in a master's programme. Important differences arise by institutional selectivity levels. The analysis shows that 24.9% of graduates from selective institutions enrolled in postgraduate studies. This is considerably higher than the percentages observed among graduates from medium and low selectivity universities (12.8% and 6.3%, respectively).

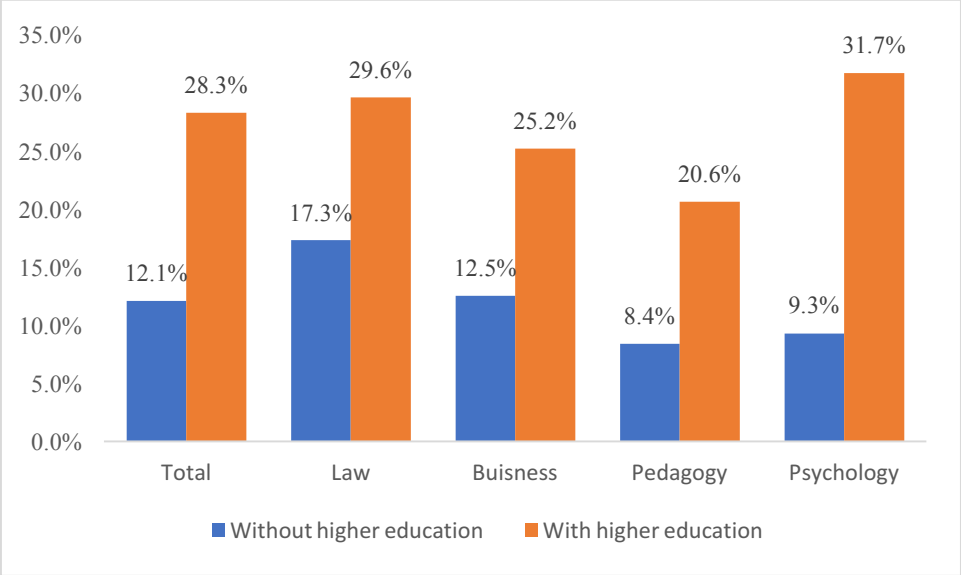
Figure 11. Percentage of individuals with postgraduate studies, by type of HEI.



Source: Author´s own elaboration

These differences are also accentuated by the socio-economic background of students: 28% of those who have mothers with higher education managed to complete and graduate from a postgraduate programme, while only 12% of graduates with mothers without higher education achieved this goal.

Figure 12. Percentage of individuals with postgraduate studies, by education of mothers



Source: Author´s own elaboration

Although results in this section are reported in relation to the education of mothers (as a proxy of the family´s cultural capital), other variables such as occupational status, type of secondary school and other measures of socio-economic status were used and analysed. Since the results were consistent despite the different social variables used, for simplicity reasons throughout this paper only this variable (education of mothers) will be presented in most cases.

The satisfaction level of graduates with the quality of the higher education institution they attended, and the contribution it has made to their lives and subsequent professional career, varies significantly according to the level of selectivity of the institution. Indeed, the level of satisfaction is considerably higher among those who graduated from selective universities.

Table 9. Percentage that considers that the institution/programme of study has helped him/her considerably to ...

		Level of selectivity		
	Total	High - selectivity	Medium-selectivity	Low - selectivity
Fulfil expectations and professional goals	83.2%	88.6% $_{a}$	86.9% $_{a}$	69.1% $_{b}$
Fulfil personal goals	76.0%	79.0% $_{a}$	77.1% $_{ab}$	68.3% $_{b}$
Get a job that they like	78.5%	82.4% $_{a}$	82.5% $_{a}$	67.7% $_{b}$
Reach an influential position	53.7%	59.9% $_{a}$	50.5% $_{ab}$	40.7% $_{b}$
Reach a socially recognised position	62.1%	68.0% $_{a}$	57.2% $_{b}$	50.3% $_{b}$

Source: Author´s own elaboration. Note: The values of the same row and sub-table not sharing the same subscript have a statistically significant difference ($p < 0.05$).

Finally, while 80.4% of the graduates from high-selectivity universities indicate that they would choose again the same institution to study, this proportion decreases to 67.7% and 42% among graduates from medium and low-selectivity institutions, respectively[58]. This shows the greater relative dissatisfaction of graduates with lower quality HEI.

Up to this point, the data clearly shows that educational trajectories are indeed different for students from different backgrounds. Poorer students enrol in less selective universities, enter the tertiary system at a later age, and take longer to graduate. Additionally, they receive a different type of education in terms of the content (curricular focus) of their coursework, which tends to be more applied and less abstract. After graduating, they are less likely to pursue a postgraduate degree and tend to be less satisfied with the education they received and the contribution it made for their careers and lives. Although some of these issues are intuitive and are usually suspected, this paper makes a contribution by empirically measuring them and reconstructing the educational pathways of the sampled cohort by social class and type of institution. Having examined the social

[58] All differences are statistically significant.

background and educational pathways of graduates, the next section moves from the educational system to the labour market to understand their insertion.

5.3. Labour market insertion: first employment and the role of social capital.

The collected evidence also confirms the importance of social capital for social mobility and the insertion of graduates in the labour market. The evidence shows that there are relevant and measurable differences in the stock of social capital of graduates from different social classes and types of university.

To analyse the level of social capital of individuals, some key indicators from the international literature were examined. In the first place, an indicator of stock of social capital adjusted by prestige is examined, which reflects the number of people that the participants declare to know in each occupational category, weighing them according to their level of occupational prestige. To construct this indicator, the sum of the products between the number of people known in each category and the corresponding occupational prestige of that category is used, following Treiman (1977).

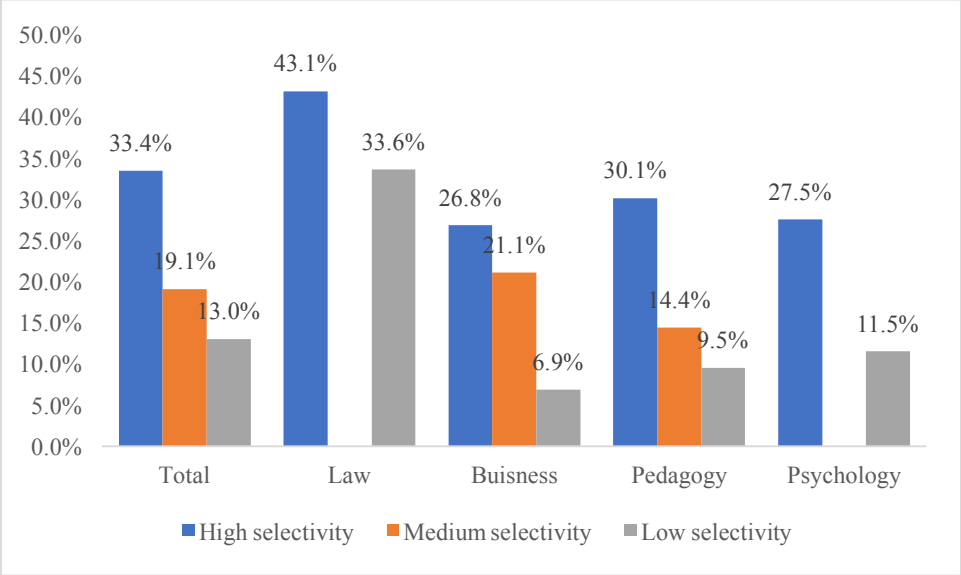
The second indicator analysed in regard to the social capital of graduates is the heterogeneity of the social network. This indicator is constructed by adding the number of occupational categories within which someone is known. These persons are only taken into account if the respondent feels he is close enough to ask that person for an employment (he/she is willing to send their CV to that person).

In sum, when we combine the social capital stock index, which captures the resources that people possess through the number of contacts reported adjusted for their occupational prestige, with the index of heterogeneity of the social network, which measures the diversity of occupations that people of each network possess, we can identify clusters of graduates, classified according to their level of combined social capital (Cluster analysis methods are used for this purpose). This method allows creating profiles made up of subjects that are most similar to each other, within each profile, and as different as possible, between the different profiles. In this way, the study generates a profile

of graduates categorised as `High´, characterised by individuals with a high stock of social capital and heterogeneous networks. Similarly, we created an "Intermediate" and a "Low" profile.

As figure 13 suggests, the percentage of graduates with a high profile is greater in high selectivity universities (33.4%), compared to those of medium (19.1%) and low selectivity universities (13%). This difference is statistically significant for the careers of Business, Pedagogy and Psychology. Although in Law the difference is not significant, the point estimate goes in the same suggested direction.

Figure 13. Percentage of graduates with high profiles of social capital, according to level of selectivity



Source: Author´s own elaboration. Note: Mean comparison controls by SES of graduates, to avoid mixing effects.

Additionally, as Table 10 suggests, the percentage of graduates with a high profile is greater in higher social classes. The evidence shows that those coming from high social classes (e.g. have mothers with higher education and studied in independent private schools) have higher social capital.

Table 10. Percentage of graduates with high profiles of social capital, according to education of mothers and type of secondary schools

Mother's educational level	**With higher education**	**28.7%$_a$**
	Without higher education	18.9%$_b$
Type of school	Private paid	35.0%$_a$
	Private subsidised	20.6%$_b$
	Public	9.8%$_c$

Source: Author´s own elaboration. Note: Mean comparison controls by selectiveness of institutions, to avoid mixing effects.

The same conclusion is reached when a simpler indicator is used, such as relatives in position of influence. We consider positions of influence as those who act as managers of large national or multinational companies, chancellors of universities, ministers, senators, parliament members, ambassadors and high-ranking military. This variable tries to identify those belonging to the economic and political elite of the country.

Table 11. Percentage of graduates with relatives in positions of influence, by socio-economic origin.

		Total	Law	Business	Pedagogy	Psychology
Socio-economic status (SES)	High	44.7% $_a$	44.9% $_a$	39.8% $_a$	56.4% $_{to}$	45.6% $_a$
	Medium	21.5% $_b$	19.5% $_b$	17.2% $_b$	21.3% $_b$	30.2% $_b$
	Low	19.9% $_b$	14.5% $_b$	22.0% $_b$	25.7% $_b$	18.7% $_b$
Type of school	Private	45.1% $_a$	46.3% $_a$	38.9% $_a$	59.3% $_a$	47.3% $_a$
	Private Subsidised	21.4% $_b$	19.3% $_b$	18.7% $_b$	27.2% $_b$	21.1% $_b$
	Municipal	14.9% $_b$	6.8% $_c$	13.0% $_b$	25.4% $_b$	15.0% $_b$

Source: Author´s own elaboration. Note: The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). [59]

[59] Mean comparison controls by selectiveness of institutions, to avoid mixing effects.

These differences matter considerably, since the use of personal contacts to get jobs differs significantly according to the social capital profile, level of selectivity of the institutions of study, and socio-economic background.

Indeed, when we analyse the percentage of graduates who got their first job through personal contacts, taking into account the social capital profiles previously created, we observe that a higher proportion of individuals with a high profile of social capital used their contacts to get a job (41.2%), compared to those who have a medium (23.7%) or low profile (28.7%). That is, the greater the social capital, the greater its use in the labour market insertion process.

Moreover, graduates from high and medium selectivity universities more frequently use their contacts to search for an employment, compared to graduates from low selectivity universities. Thus, those graduating from more selective institutions not only have higher levels of social capital, but also use it more frequently to search for jobs and better opportunities.

As table 12 shows, while 38.8% of graduates of selective higher education institutions used their contacts to find their first job, only 16% of the less selective institutions peers used their social capital. This difference is more than three times in the case of law graduates (53.8% vs. 16.5%).

Table 12. Percentage of graduates using personal contacts to find their first job, by type of HEI.

	Total	Law	Business	Pedagogy	Psychology
High Selectivity	38,8%$_a$	53,8%$_a$	26,1%$_a$	15,3%$_a$	38,1%$_a$
Medium Selectivity	38,0%$_a$		34,3%$_a$	54,7%$_b$	
Low Selectivity	16,0%$_b$	16,5%b	7,0%$_b$	19,2%$_a$	22,2%$_b$

Source: Author´s own elaboration. Note: Mean comparison controls by SES of graduates, to avoid mixing effects.

In fact, evidence shows that those who possess greater cultural capital tend to use their contacts more frequently to search for a job (Table 13). Indeed, while 40.1% of graduates who have mothers with higher education used their personal contacts to find their job, only 23.3% of graduates with mothers without higher education resorted to such strategy. Therefore, in the process of job search, cultural and social capital reinforce each other, i.e. individuals with higher levels of cultural capital

tend to use their social capital - which is larger- more often than those with lower cultural capital. This phenomenon allows the former to have a clear advantage in the labour market, over the latter.

Table 13. Percentage of graduates using personal contacts to find their first job, by socio-economic origin.

		Total	Law	Business	Pedagogy	Psychology
Mother's Educational Level	With Higher Education	40,1%[a]	49,3%[a]	28,9%[a]	46,0%[a]	41,7%[a]
	Without Higher Education	23,3%[b]	28,9%[b]	17,7%[b]	24,8%[b]	23,3%[b]

Source: Author´s own elaboration. Note: Mean comparison controls by selectiveness of institutions, to avoid mixing effects.

Once inserted in the labour market, the data show the existence of wage gaps associated with types of HEI, programmes of study, class and social capital, among other variables. To econometrically analyse the factors associated with the first job salary, a multiple linear regression (OLS) was estimated, which included a series of control variables to isolate the effect of each of them on wages.

The results show that graduates with greater social capital actually receive higher wages per hour upon graduation (see detail in Annex 1). Specifically, increasing one standard deviation in the social capital indicator is associated with a statistically significant increase of 2.6% in the first job hourly wage. Additionally, the social origin of graduates has a statistically significant effect on salaries. For example, individuals who come from intermediate social classes (III and IV), according to the EGP classification (1979), receive a salary that is 10.6% lower than those who come from the upper classes (I and II). In turn, those who come from a family whose mother does not have higher education earn a salary which is 8.8% lower, than those who have a mother with higher education. In general, the relevance of social origins diminishes or disappears when social capital indicators are included, which would probably suggest that high SES families transfer their social advantages through greater access and accumulation of social capital.

The analysis also shows that the degree subject is, without a doubt, the variable with the greatest influence on salaries upon graduation. Those who graduate from Business and Law degrees have a special advantage, although this is also observed to a lesser extent for Psychology, when

compared to Pedagogy. Likewise, those who graduate from highly selective institutions receive considerably higher salaries – 12.6% - than those who graduate from less selective institutions, even after controlling for individual PSU test scores[60] (ability proxy).

5.4. Occupational destination: quality and status of current employment.

This study also examined the job quality of current employment of graduates by social origin, quality of the institution of study and other variables of interest. The importance of access to higher education lies, to a large extent, in that it allows reaching higher positions in the social structure, better quality jobs that offer greater economic welfare, influence and social recognition.

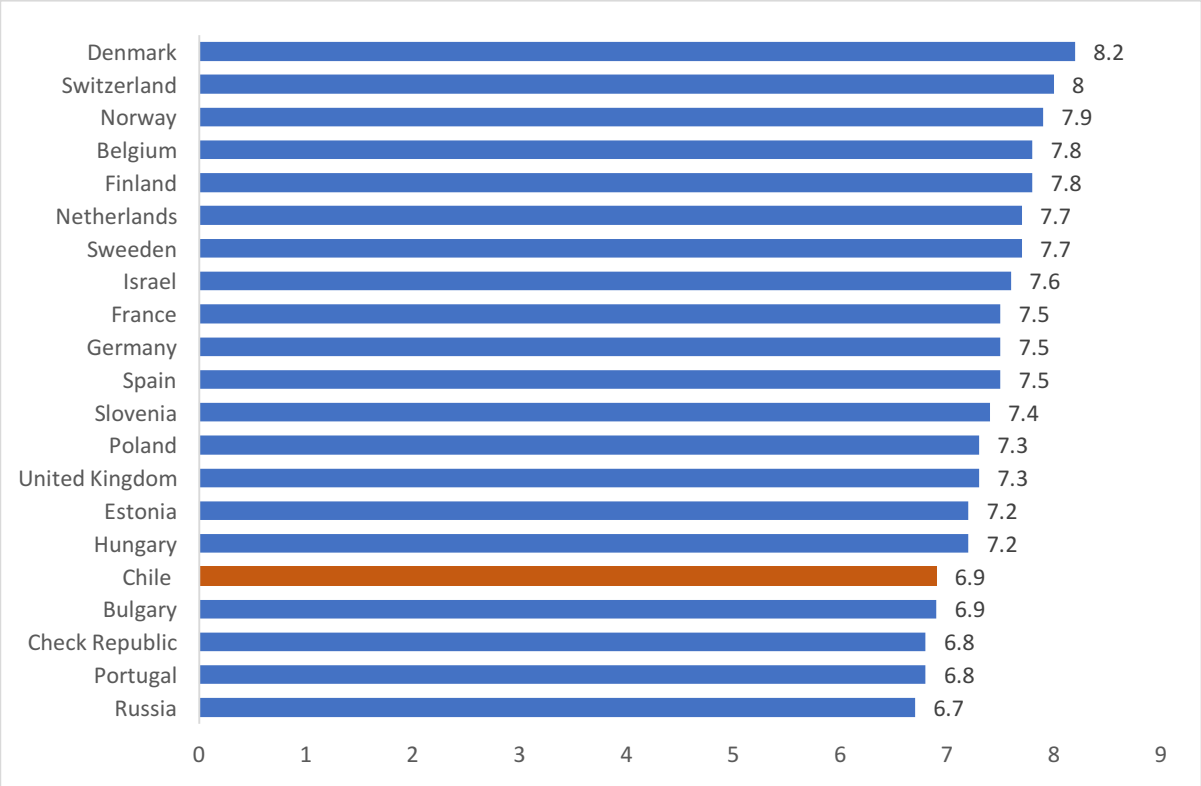
For these purposes, the analysis incorporates two traditional ways of conceptually defining and measuring the quality of employment. First, quality is considered from a subjective perspective, measured through the level of job satisfaction of individuals. Second, the analysis uses an objective perspective to evaluate the quality of employment, in line with the European Working Conditions Survey (EWCS). This examines the quality of employment from a multidimensional approach that observes different characteristics of jobs, grouped into four dimensions: i) income, ii) job prospects, iii) intrinsic quality, and iv) quality of time. The last three are included in this section, while the income dimension is analysed in more detail the next section.

It should be noted that income and job prospects correspond to extrinsic characteristics of work. The job prospects are related to aspects of work that contribute to satisfy the need for income (current and future) and the psychological need for continuity and career advancement. The intrinsic quality of work refers to those aspects that relate to work itself and its environment, such as the use of skills and autonomy, the social environment, the physical environment and the intensity of work. Finally, the quality of time is associated with those aspects of work that contribute or hinder an adequate balance between work and personal life (Eurofound, 2012). In addition to the objective and subjective dimensions of employment, this study considers other aspects of quality, such as the ability to influence the organizations where they perform and the likelihood of occupying positions of leadership.

[60] Prueba de Selección Universitaria (PSU) is a standardised test used for higher education admissions.

By combining the results of this study with those obtained by the European Social Survey, it is possible to contextualise the national data, and verify that Chile would be among the group of European countries with the lowest job satisfaction, located just above Russia, Portugal, Czech Republic and Bulgaria (Figure 14). This result should be worrisome if one considers that the Chilean sample is composed of university graduates, i.e. by a privileged social segment. Therefore, the general relative position of Chile would certainly decrease if the rest of the workers were included in the sample.

Figure 14. Average job satisfaction for European Social Survey countries (2010) and Chile (present study).



Source: Prepared by the author based on the European Social Survey 2010. Scale 1-10.

However, there are important differences in terms of graduates´ job satisfaction. The evidence shows that graduates from high and medium selectivity institutions have greater satisfaction with their current work, than graduates from low selectivity programmes (Table 14). In addition, the educational level of mothers seems to be a key variable, since those who have mothers with higher education show greater job satisfaction.

Moreover, when studying the intrinsic quality of employment, the analysis shows that graduates from less selective universities, and those who have mothers without higher education, have lower quality jobs. Their jobs tend to be inferior in terms of the required skills, level of autonomy to develop their tasks, quality of time, and work schedules. It is important to mention that the mean comparison controls by SES of graduates, to avoid mixing effects.

Table 14. Percentage of graduates satisfied/very satisfied with different aspects of their work, by type of HEI.

	Selectivity Level		
	High-selectivity	Medium - selectivity	Low-selectivity
Physical conditions of work	54.4% $_{a}$	52.3% $_{a}$	38.2% $_{b}$
Freedom to choose own method of work	65.0% $_{a}$	66.7% $_{a}$	42.3% $_{b}$
His work partners	63.0% $_{a}$	58.1% $_{to}$	40.2% $_{b}$
Recognition you get from work well done	52.0% $_{a}$	52.5% $_{a}$	38.8% $_{b}$
Your immediate superior	50.8% $_{a}$	55.5% $_{a}$	38.2% $_{b}$
Responsibility assigned to you	59.6% $_{a}$	51.9% $_{a, b}$	42.2% $_{b}$
Your salary	44.5% $_{a}$	40.8% $_{a}$	28.0% $_{b}$
The possibility of using their capabilities	60.6% $_{a}$	61.4% $_{a}$	41.1% $_{b}$
The attention given to the suggestions made	46.9% $_{a}$	46.8% $_{a}$	33.2% $_{b}$
Your work schedule	51.9% $_{a}$	47.3% $_{a, b}$	39.9% $_{b}$
The variety of tasks he performs in his work	52.7% $_{a}$	52.0% $_{a, b}$	41.8% $_{b}$
Your stability in employment	60.2% $_{a}$	73.4% $_{b}$	43.3% $_{c}$

Source: Author´s own elaboration. Note: The values of the same row and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by SES.

These findings are key to properly understand social mobility processes. Indeed, one of the main weaknesses of studies in this field is the tendency to omit the key dimensions that define the quality of jobs and focus exclusively on the analysis of classes -in sociology- or salary- in economics.

While many university students manage to access the service class and obtain an adequate salary according to their career, many of those same individuals -especially those from less selective institutions- do not fully fulfill their expectations as professionals, since they access jobs where their abilities are not put to the test, their opinions are not taken into account, or they do not have control over their work, and, consequently, they can not exercise their creativity, capacity and autonomy. Therefore, an adequate analysis of the social mobility and work trajectories of graduates

of higher education should investigate these aspects to obtain a more holistic and accurate picture of the social differences that persist between the different groups.

Additionally, graduates from less selective institutions and those who have mothers without higher education would have less access to minimum benefits (paid vacations, paid sick leave, social security, health insurance) than their peers from more selective institutions and more educated family backgrounds (Table 15).

Table 15. Percentage of graduates with basic labour benefits, by socio-economic origin.

		Total	Law	Business	Pedagogy	Psychology
Educational level of the mother	With higher education	68.7 $_{a}$	59.3%$_{a}$	76.4% $_{a}$	71.4% $_{a}$	73.9% $_{a}$
	Without higher education	55.5 $_{b}$	51.7%$_{a}$	62.4% $_{b}$	56.5% $_{a}$	49.3% $_{b}$

Source: Author´s own elaboration.[61]

Even more important, graduates from less selective universities and whose mothers do not have higher education have lower access to high-level directive managerial positions. While only 6.4% of graduates from low selectivity institutions work as Directors or Chief Executives of an organization, 14.4% of graduates from medium selectivity institutions and 17.3% of graduates from high-level universities achieve this position (Table 16).

Table 16. Percentage of graduates who occupy high-level directive managerial positions, by type of HEI.

	Total	Law	Business	Pedagogy	Psychology
High Selectivity	17,3%$_{a}$	16,4%$_{a}$	23,6%$_{a}$	12,2%$_{a}$	14,8%$_{a}$
Medium Selectivity	14,4%$_{a}$		16,1%$_{ab}$	6,1%$_{ab}$	
Low Selectivity	6,4%$_{b}$	15,2%$_{a}$	8,1%$_{b}$	2,5%$_{b}$	3,7%$_{b}$

Source: Author´s own elaboration. Note: The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by SES.

[61] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by selectivity.

Finally, data show that those who are more likely to occupy directive managerial positions are those from high socio-economic status families and paid private schools, and also those who have mothers with higher education. In other words, the social origin of individuals affects their possibilities of accessing positions of power, in spite of having obtained the same academic degrees from the same institutions than their peers from advantage backgrounds.

Table 17. Percentage of graduates holding high-level directive managerial positions, by socio-economic origin.

		Total	Law	Business	Pedagogy	Psychology
Educational level of the mother	With higher education	18.7% $_a$	17.0% $_a$	27.8% $_a$	4.4% $_a$	12.6% $_a$
	Without higher education	11.0% $_b$	16.7% $_a$	11.8% $_b$	8.9% $_a$	5.8% $_b$

Source: Author´s own elaboration.[62]

Inequality of access to directive managerial positions is highly relevant, because these positions not only carry a higher social status, but also a higher level of wages, job satisfaction and influence within the organization to hire/fire employees, determine budgets, and define objectives and activities within the institution (as reported by graduates).

Table 18. Wage per hour (Chilean pesos), job satisfaction and proportion of graduates that declares to have high influence, according to the position within the organisation.

	Directors and managers	Other positions
Hourly wage	$ 11,227 $_a$	$ 7,819 $_b$
Job Satisfaction (Scale 1-10)	6.0 $_a$	5.0 $_b$
Influence in the organization[63]	82% $_a$	17% $_b$

Source: Author´s own elaboration.[64]

[62] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by selectivity.

[63] To determine the degree of influence, each respondent had to answer whether or not it influenced three aspects of their work: budget, hiring/firing, and organizational objectives. Those who responded affirmatively to the three previous aspects were classified as influential in their organization.

[64] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by selectivity. The category `other positions´ considers middle managers and subordinate positions.

In order to properly disentangle different effects, a series of logistic regression models were estimated to analyse the effect of certain variables of interest, such as social origin and type of institution, on the probability of occupying high-level directive managerial positions, controlling for other relevant variables (see detail in Annex 1). The results show that those who have mothers with higher education have a considerably higher probability than those who have mothers without higher education, ceteris paribus (16.6% vs 8.7%, respectively). Additionally, the evidence suggests the existence of labour market discrimination against women. In fact, women have fewer opportunities than men to become high-level managers (8.3% vs. 16.4%, respectively).

At the same time, the data shows that studying at a high quality institution increases the chances of occupying high-level directive positions. While the probability for a graduate of a low-selectivity university is only 5%, the chances for those who graduate from a medium or high selectivity institution is 11.8% and 15.7%, respectively.

Therefore, it is possible to conclude that the quality of higher education institutions and the social origin of graduates have an important influence over the occupational status and the hierarchical position within their organization that individuals achieve upon reaching occupational maturity.

5.5.Wages: the distribution of the monetary benefits of higher education.

This section analyses the wages of higher education graduates. Average salaries per hour (Chilean pesos) are analysed by social origin and level of institutional selectivity. The data shows that graduates from high and medium selectivity institutions have higher average hourly salaries than graduates from low selectivity universities, even when graduates´ SES is controlled for.

Table 19. Average hourly wage in current employment (CHL pesos) by HEI selectiveness

		Total	Law	Business	Pedagogy	Psychology
Hourly Wage	High selectivity	9,390 $_a$	10,486 $_a$	14,514 $_a$	4,360 $_a$	7,241 $_a$
	Medium selectivity	9,527 $_a$	-	10,762 $_b$	4,978 $_a$	-
	Low selectivity	5,368 $_b$	6,631 $_b$	7,146 $_c$	3,607 $_b$	5,864 $_b$

Source: Author´s own elaboration.[65]

[65] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by SES.

When analysing the differences considering the social origin of the graduate, specifically the educational level of the mother, the data show that those who come from the most affluent classes receive on average an hourly wage 26% higher than those from lower classes, regardless of the type of institution attended.

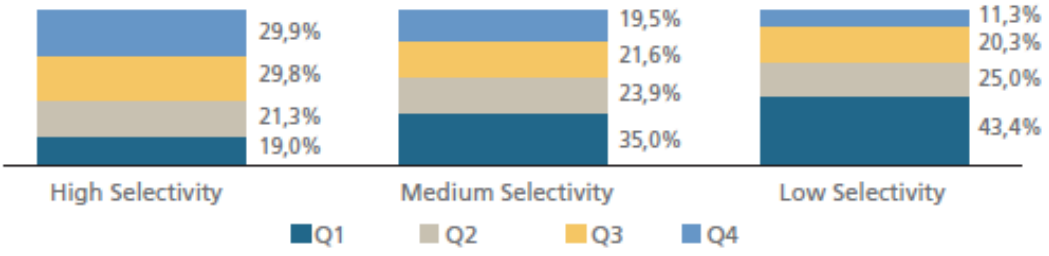
Table 20. Average salary per hour of current employment (in pesos), according to the mother's educational level.

		Total	Law	Business	Pedagogy	Psychology
Educational level of the mother	With Higher Education	$8,856$_a$	$8,443$_a$	$12,418$_a$	$6,219$_a$	$7,381$_a$
	Without Higher Education	$7,057$_b$	$8,397$_a$	$9,972$_b$	$3,941$_b$	$6,103$_b$

Source: Author´s own elaboration. Note: The values of the same column and sub-table that do not share the same subscript have a statistically significant difference (p <0.05). Data obtained with weights that control by selectivity.

Additionally, the distribution of graduates´ wages was analysed using salary quartiles for each type of university. It is possible to observe that graduates from lower selectivity institutions have a higher share or presence (43,4%) in the lowest income quartile (Q1). On the other hand, graduates from the most selective universities have a greater proportion of their members (29,9%) located in the upper quartile of salaries (Q4), compared to low-selectivity universities (11,3%).

Figure 15. Distribution of graduates by wage quartiles and institutional selectivity.



Source: Author´s own elaboration.

Finally, in order to analyse salaries in greater detail, a series of multiple linear regression models (OLS) were estimated, including the following control variables to isolate the effect of each of them on wages (see detail in Annex 1): gender, experience, experience squared, PSU test score

(skill proxy), social capital, social origin (three optional variables are used separately: mothers´ education attainment, fathers´ social class, SES), degree subject, institutional selectivity, and type of institution (public/private). The dependent variable is the hourly wage in the current employment (logarithm). Regardless of the different specifications used, the results tend to be consistent between the models.

The evidence shows that individuals with greater social capital have access to higher salaries. Specifically, an increase in one standard deviation in the social capital stock indicator is associated with a statistically significant increase of 8.1% in current wages.

Women currently receive a salary that is approximately 5% lower than that of men, once relevant factors are econometrically taken into account.

Additionally, graduates´ social origin, measured in terms of the educational attainment of mothers, has a statistically significant effect on wages. For example, graduates who have mothers with higher education obtain a salary that is 14.6% greater than their peers (graduates who have mothers without higher education). The observed inequality between groups remains despite controlling for other relevant variables. Indeed, families' cultural capital is relevant in graduates´ trajectories, even after individuals have been working in the labour market for about a decade.

Moreover, the evidence shows that the programme of study is the single most influential variable on current wages. Those who graduate from Business and Law have a special premium, although this is also observed to a lesser extent in the case of Psychology, in relation to Pedagogy. Likewise, those who graduate from highly selective institutions receive salaries that are 25.5% higher than those who graduate from low selectivity institutions. These gaps are observed even after controlling for individual PSU test scores and other relevant variables.

Also, those who graduate from public institutions receive a salary that is 23.8% higher than their peers from private institutions (ceteris paribus). This trend is the opposite of what is observed when graduates enter the labour market. Therefore, it is possible to verify that in the long run, the labour

market would reverse the initial trend, showing a preference or higher appraisal of graduates from public institutions.

When analysing job stability after the initial job placement, the data shows that 67.5% of graduates from low selectivity universities have had only one employer throughout their career. This percentage drops to one third, or less, among graduates from high or medium selectivity institutions.

Table 21. Percentage of graduates that has had only one employer in his/her working career, by selectivity.

	Total	Law	Business	Pedagogy	Psychology
High selectivity	36.1% $_{a}$	35.3% $_{a}$	31.4% $_{a}$	69.8% $_{a}$	29.5% $_{a}$
Average selectivity	29.1% $_{a}$		29.6% $_{a}$	26.9% $_{b}$	
Low selectivity	67.5% $_{b}$	71.5% $_{b}$	72.4% $_{b}$	69.6% $_{a}$	56.6% $_{b}$

Source: Author´s own elaboration.[66]

Moreover, those who have mothers with higher education tend to change employers more frequently than those who have mothers without higher education.

Table 22. Percentage of graduates that has had only one employer in his/her working career, by mother´s education

		Total	Law	Buisness	Pedagogy	Psychology
Educational level of the mother	With HE	18.5%	27.0%	19.6%	25.6%	8.7%
	Without HE	60.5%	63.7%	57.9%	60.7%	60.6%

Source: Author´s own elaboration.[67]

Although the recurrent change of employers could be seen as a sign of job insecurity, the evidence presented in this study suggests that it is rather a sign of job promotion and labour market matching, which reflect a process of adjustment and search for better jobs throughout the years. In fact, those who have changed their employer at least once in their professional life, tend to experience

[66] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by SES.
[67] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by selectivity.

significantly higher salary growth rates than those who remain with the same employer. Thus, higher job turnover rates tend to be linked to higher salary increases.

Unfortunately, given that job turnover rates are positively associated with the cultural and social capital of individuals, this mechanism consolidates the social advantages privileged groups.

Table 23. Wage growth of graduates since entry into the labour market (wage of current employment / wage first job), by number of employers and SES.

		Employers since graduation			
SES		One	Two	Three	Four or more
	Total	42%$_a$	129%$_b$	143%$_b$	138%$_b$
	High (ABC1)	32%$_a$	121%$_b$	148%$_b$	127%$_a$
	Medium (C2, C3)	38%$_a$	114%$_b$	145%$_b$	140%$_b$
	Low (D, E)	38%$_a$	136%$_b$	115%$_b$	121%$_b$

Source: Author´s own elaboration.[68]

In fact, young professionals of low SES tend to often have only one employer in their career and, therefore, experience a wage growth of around 38%. Meanwhile, their peers of high SES tend to have two or more employers and, therefore, have wage growths above 121%.

A multiple linear regression (OLS) was estimated to elucidate the behaviour of graduates' wage growth over time and econometrically analyse the factors associated with their evolution. In order to achieve this goal, a series of control variables were included to isolate the effect of each one of them (see details in Annex 1): gender, experience, experience squared, PSU test score (individual ability proxy), social capital, social origin (mothers´ education attainment), degree subject, institutional selectivity, type of institution (public/private), and number of employers during the working life of each individual. The dependent variable is the growth of hourly wages, since entry into the labour market.

[68] The values of the same column and sub-table that do not share the same subscript have a statistically significant difference ($p < 0.05$). Data obtained with weights that control by selectivity.

The results show that average salary growths from the year of graduation was 94.7% for the total sample. However, being a woman is associated with a wage growth that is 16.9 percentage points lower than men.

Those with greater social capital upon graduation tend to experience higher salary growths. In fact, a rise of one standard deviation in the social capital indicator increases total wage growth by 13.4 percentage points. On the other hand, those who have mothers with higher education experience an additional 25.3 percentage points increase in their wage growth rate, compared to those who have mothers without tertiary education.

Consequently, in the long term, wages diverge by socio-economic background, since those who come from families with greater cultural and social capital tend to experience higher increases than the rest. Even controlling for a series of variables, including the degree subject, quality of the higher education institution and PSU scores, the social origin continues to influence the fate of individuals. This happens after about a decade after entering the labour market, thus the higher education promise to equalise opportunities seems unfortunately to be only partially fulfilled.

Finally, the evidence shows that those who change employers more frequently tend to experience greater wage growth, compared to those who permanently maintain the same employer. In fact, those who changed employers once, twice or more times increased their salary growth by 55, 66 and 68 percentage points, respectively, compared to those who did not change their employer.

5.6. Objective and subjective social mobility: analysing intergenerational trajectories.

This final section analyses the level of social mobility experienced by graduates, both in objective and subjective terms. `Objective´ social mobility is observed by comparing the location of graduates in an occupational scale, with the location occupied by their parents in the same scale, when the former were 14 years old. For this purpose, the occupational classes defined by Erikson, Goldthorpe & Portocarero (1979) and the International Standard Classification of Occupations, ISCO-08, established by the ILO (2012), are used.

On the basis of this information, it is possible to analyse the over or under-representation of the different social classes of origin in the distribution of the current most advantaged social classes (e.g. Class I), controlling for the relative size of each group in the total sample[69].

Indeed, as may be seen in Table 24, according to the sample size of each segment, it would be expected that 24.3% of the graduates who now make up Class I were originally from that social class. However, the reality is different, since currently 33.4% of the young individuals that make up Class I come from families of that same social class. Therefore, the data shows that the segment that comes from Class I is overrepresented at 37%.

Table 24. Social mobility of graduates: expected versus real presence of social class I of origin in social class I of destination.

	EXPECTED representation of the children of social class I parents, in the distribution of the current social class I, according to relative size in the total sample (A)	**REAL representation of the children of social class I parents, in the distribution of the current social class I, according to relative size in the total sample (B)**	**Over representación in current social clase I (B/A)**
Social class of origin (parents): Class I	24.3%	33.4%	1.37

Source: Author´s own elaboration.

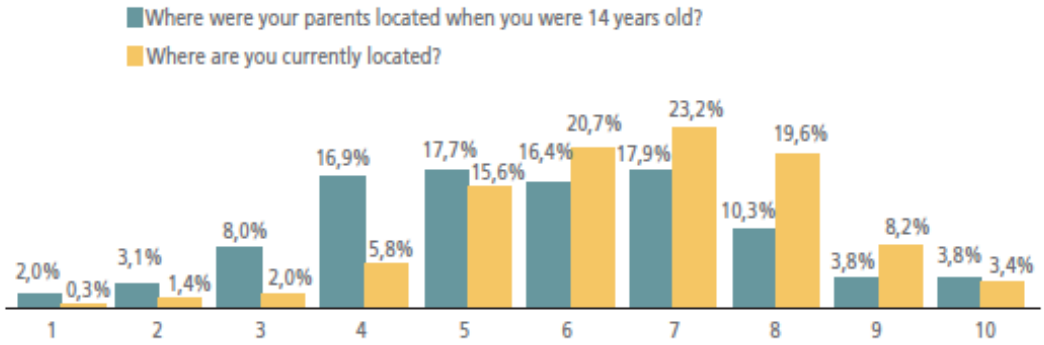
These results show once again that the most important positions in the social and productive structure of the country tend to be reserved for those who come from the highest social classes, even when those who compete for them have the same educational level. Based on these indicators, the existence of opportunities gaps between the different social classes is detected again. These

[69] For the purpose of this analysis, we take inequalities of access as given, focusing on the additional disparities that arise after graduation in terms of representation in the upper class.

gaps generate divergent work trajectories, limiting the access of certain groups to the best jobs, and opportunities, and a better quality of life.

On the other hand, `subjective´ social mobility considers the interviewees' own perception of their intergenerational social trajectory. In order to analyse this phenomenon, this study examines the perception that graduates have about their own current location on a socio-economic scale, compared with their parents' location when the former were adolescents.

Figure 16. Subjective location of parents and graduates in a socio-economic scale.



Source: Author´s own elaboration. Category 1 corresponds to lowest socio-economic group and category 10 relates to the highest socio-economic group.

The data show that the distribution of the positions of the parents is on the left side of the distribution of the positions of the graduates. This would indicate that, in general, there is a perception of intergenerational upward mobility. Most judge their own situation as better than their parents'. Also, the average location is also useful to illustrate the subjective experience of social mobility. While the average position given to parents in the social scale is 5.7, the average current position of the graduates is 6.6. This difference, which is statistically significant, confirms that on average there is a general perception of upward social mobility among graduates of university education.

The evidence shows that the majority of graduates who had access to higher education experienced upward social mobility, both objective and subjective. However, this study not only gathered information about the degree of objective and subjective social mobility of graduates, it also examined some of the barriers that prevent them from occurring. With this objective in mind,

graduates were asked to identify episodes of discrimination in the labour market, of which they themselves had been victims.

Table 25. Percentage of graduates who report having been discriminated in the labour market, by SES

		Total	Law	Business	Pedagogy	Psychology
NSE	High SES	13,1%$_{a}$	14,4%$_{a}$	10,3%$_{a}$	5,1%$_{a}$	18,3%$_{a}$
	Medium SES	29,6%$_{a}$	23,3%$_{ab}$	28,7%$_{b}$	31,2%$_{b}$	36,9%$_{b}$
	Low SES	20,5%$_{a}$	30,4%$_{b}$	15,1%$_{a}$	20,8%$_{b}$	14,3%$_{a}$
School type	Independent Private School	14,3%$_{a}$	14,3%$_{a}$	12,2%$_{a}$	4,3%$_{a}$	19,3%$_{ab}$
	Private Subsidised School	30,2%$_{a}$	31,2%$_{b}$	27,3%$_{b}$	30,7%$_{b}$	32,6%$_{a}$
	Public school	20,6%$_{a}$	26,0%$_{b}$	19,8%$_{ab}$	20,3%$_{b}$	15,0%$_{b}$

Source: Author´s own elaboration.

The analysis shows that high socio-economic status graduates and those who graduated from private schools tend to experience discrimination less frequently than their more disadvantaged peers. These self-reported discrimination episodes reflect the existence of invisible but tangible barriers that affect the labour trajectories of individuals, limiting their professional development and the social mobility opportunities that have been promised by higher education. In this case social norms about what seems more prestigious and socially valuable (e.g. foreign last names, lighter skin colour, etc.) tend to hinder social mobility.

In summary, this research has empirically examined, verified and measured what is too often only intuited: although on average the Chilean higher education system effectively grants greater and better job opportunities to those who graduate from it, it does so in a differentiated manner. In other words, while higher education is an effective strategy to achieve social mobility, under its current highly stratified organisation, it also functions as a mechanism that reproduces and perpetuates inequalities between social classes, unfulfilling the promise of equalizing opportunities among individuals. The unequal distribution of cultural and social capital among professionals from different social groups, combined with the greater capacity of the elites to use and mobilise their capitals in the labour market, allows the latter to access better jobs.

From a broad perspective, the results of this study seem to show the existence of parallel and even divergent labour trajectories between different socio-economic groups. In this regard, the data

show that the highest salaries, quality jobs and positions within each organisation are somehow preserved mainly for those coming from the most advantaged families. Although those who come from the middle and lower classes experience a substantial absolute mobility with respect to their origins, in general, they do not manage to reach the top of the social structure. That is, they cannot access the full advantages enjoyed by higher groups. Thus seen, this study would confirm the existence in Chile of a curtailed type of social mobility, characterised by the existence of a "selective glass ceiling" - which, of course, has some degree of permeability - that tends to hinder the ascension of the middle and lower classes, and that separates and gives rise to two types of job trajectories and/or sets of life opportunities. This glass ceiling would be configuring at least two different social mobility patterns: one for low and medium groups and another for groups of high socio-economic status. This finding is consistent with the national evidence regarding the existence of differentiated social mobility patterns, where there is a barrier that partially prevents the entrance of middle and lower groups to the top of the social structure (Torche, 2005). Likewise, this observation is consistent with the pattern of income and wage inequality in Chile, where there is a relative equality of income up to the fourth quintile and a high concentration in the fifth quintile, especially in the top 1% (González, 2020).

As a consequence, governments should continue promoting policies to increase access to higher education, while at the same time: (i) designing and implementing programmes that allow supporting the most disadvantaged groups, both financially and academically, in order to decrease dropout rates and increase graduation rates; (ii) regulating and supporting higher education institutions in order to improve their quality; (iii) adjusting institutions´ curricula to produce better citizens and professionals who are able to adjust to the labour market´s demands; (iv) encouraging institutions to put in place strategies to support the labour market participation of their graduates; (v) and monitoring and regulating discriminatory practices that exists in the labour market, in order to guarantee that every individual in society is capable and free to deploy their talent regardless of their social origins.

6. Conclusions and policy implications

The results of this study provide a novel contribution to the corpus of evidence on social mobility, inequality and their relationship to higher education. It should raise serious concerns around the institutional framework of the Chilean higher education system, which due to its free market logic allows the existence of extreme quality gaps between institutions, as it has shown through the data. Theses differences persist even when SES, innate skills and ability proxies are included in the regressions.

It also raises concerns about the social norms in the labour market, which seem to reward being from a upper class of origin, despite having equivalent level of education. This clearly requires a cultural and regulatory change in the selection and promotion practices in the labour market.

The results contribute to our understanding of topics that have not been sufficiently researched in Chile and Latin America, related to the labour trajectory and employment quality of higher education graduates as well as the importance of social capital in labour market insertion processes.

These result also give rise to a series of hypotheses that surely require additional investigation and reflection in order to better understand the relationship between education and employment in Chile and the rest of Latin America.

The findings from this research can be summarised in the following manner. First, the advantages and disadvantages of origin (cultural and economic capital) are transferred indirectly from one generation to another through the quantity, type and quality of education young people receive. Children from the most advantaged families tend to attend higher quality institutions and frequently build on their professional training with graduate degrees. Likewise, the curriculum offered at institutions that typically serve the upper-middle and upper classes emphasises critical and abstract thinking while less selective institutions, which the majority of middle and lower class students attend, emphasise more applied and practical content. The results tend to generate a `division of labour´ from the beginning of professional training, which is later reflected in the

hierarchical level of the positions attained by each group within the organisations where they work. All of this ultimately reinforces educational and labour disparities associated with family origin.

Second, specific institutional aspects of the Chilean higher education system play against social mobility: the marked horizontal differentiation – i.e. different quality institutions at the same educational level – which is the result of deregulation and inadequate quality insurance mechanisms. It is important to note that horizontal differentiation and selectivity are not in and of themselves problematic in higher education as long as they reflect the distribution of skills and academic performance and both of those variables are independent of students' social origin. However, since Chilean society is characterised by strong social and educational inequality, horizontal differentiation among institutions merely perpetuates and widens the gap of opportunities available for each socio-economic group. Given that learning opportunities are linked to social origin, instead of selecting on the basis of academic merit, institutions of higher education frequently end up selecting (although they might not know or try to ignore it) by social origin. In doing so they mistake social advantage for merit. In the Chilean context, the excessive horizontal differentiation among institutions is prejudicial and requires compensatory measures.

Third, the evidence presented in this study also reveals an important direct effect of social class of origin on the type and quality of work obtained, which enables the advantages of the elite to be passed from one generation to another. Specifically, graduates' social networks – measured through stock of cultural capital and heterogeneity of the contacts – proves key to facilitating insertion into the labour market and accessing better jobs. Indeed, analyses show that individuals from more advantaged social origins who graduate from higher quality institutions have more prestigious, larger and more heterogeneous social networks and that these graduates use their networks more frequently to access better positions. In short, this confirms that social advantages are transferred indirectly through a better education and are transferred directly through labour market contacts.

Fourth, an interesting relationship between employment stability and salary growth rates also emerged. The study showed that, while individuals from lower socio-economic levels who graduate from lower quality institutions have more stable careers in the long term, that stability is

associated with lower rates of salary growth. On the other hand, individuals from advantaged social classes who graduate from higher quality institutions tend to rotate and change employers more frequently, resulting in higher salary growth rates in the long term, even when controlling for standardised test scores and other key variables. Thus, the salary trajectories of the different socio-economic group, even when they graduate from the same degree programmes and institutions, diverge in the medium and long term.

Fifth, overall results show that social origin and the selectivity of the institution of higher education are positively associated with greater job satisfaction, probability of reaching a senior position (manager or director) within the organisation and (intrinsic and extrinsic) quality of current employment.

Sixth, there are also some worrying signs related to social discrimination practices in the Chilean labour market that should not go unnoticed. While not the focus of this study, this research shows that a considerable proportion of graduates self-report experiencing discrimination. As would be expected, these events are more frequent among subjects from more disadvantaged social backgrounds who studied in public or subsidised schools. Thus, discrimination could partially explain the divergence observed in labour trajectories.

Seventh, from a broader perspective, the results of this study show the existence of parallel and even divergent labour trajectories between different socio-economic groups. In this regard, it is interesting to note that the data show that the highest salaries, quality jobs and positions within each organization are somehow reserved primarily for those from the most advantaged families. On the other hand, although those who come from the middle and lower classes experience substantial mobility in absolute terms relative to their origins, in general, they do not manage to reach the top of the social structure. That is, they do not access the full advantages enjoyed by higher socio-economic groups. From this perspective, this study would confirm the existence in Chile of a curtailed type of social mobility, characterised by the existence of a "selective glass ceiling" that tends to hinder the rise of the middle and lower classes, and that separates and generates two types of job trajectories. This glass ceiling would set at least two different social mobility patterns: one for low and middle groups and another for groups of high socio-economic

status. This finding is consistent with the national evidence regarding the existence of differentiated social mobility patterns, where there is a barrier that hinders the entrance of middle and lower groups to the top of the social structure (Torche, 2005). Likewise, this observation is consistent with the pattern of income and wage inequality in Chile, where there is a relative equality of income up to the fourth quintile and a high concentration in the fifth quintile, especially in the top 1% (González, 2020).

In summary, the quality of the institution of higher education and the individual's social class of origin impact the labour market insertion process as well as destination, salary, employment quality and position attained several years after graduation. Thus, in the context of the educational, labour and social institutions in 21st century Chilean society today, a person's social origin tends to mark and limit, that which he or she can be, do or achieve in his or her lifetime. This holds true for the general population as well as those who access higher education, studying in the same degree programme and institution, and with great effort and talent graduate as professionals.

7. Contributions to the field of academic research

In addition to its policy implications for Chile, this study also has broader empirical, methodological and theoretical implications. From an empirical perspective, this study has measured and quantified, in a concrete and integrated manner, several areas and effects tied to educational and labour trajectories which are usually studied partially and separately. The inclusion of a series of variables related to the quality of the programme of study and institutions of higher education, as well as the social capital and socio-economic level of graduates has improved the understanding of some of the factors associated with the resulting labour trajectories. Likewise, by tackling areas beyond income and social class destination, this study has taken an important step toward more detailed understanding of the processes involved in labour insertion, use of contact networks, labour rotation, employment quality and social mobility.

Moreover, the face-to-face survey of an extensive sample (more than 1,300 cases) ensures the high quality of the data collected. In contrast, often studies are based on low-reliability internet surveys. Finally, surveying the graduates about eight to ten years after graduation at a moment when their

professional cycle will soon reach occupational maturity provided a more robust look at their labour trajectories. Probably more than any other study available to date in Chile or Latin America, the presented analyses allows to delve into and expand knowledge of a series of phenomena. While in some cases the phenomena are intuitive, few studies measure and account for them in a scientific and integrated manner. However, there is still much research to be done in order to more thoroughly understand the labour trajectories of higher education graduates. Thus, this study is expected to give rise to other research that continues to expand knowledge in this area.

From a theoretical-methodological standpoint, this study presents a challenge and necessary critique of a long tradition of sociology research that attempts to understand the phenomenon of social mobility based on intergenerational movement between social classes of origin and destination. Despite its strengths, that focus has important limitations. Using occupational categories that are too broad (e.g. EGP, 1979), does not detect differences and nuances within the same social class or occupation. These nuances have a significant impact on wages, employment quality, autonomy, satisfaction, status and on individuals´ hierarchical position within the organisation where they work. Thus, using a class focus to judge the degree of social mobility attained by an individual is surely incomplete and insufficient as it does not result in thorough understanding of the processes involved or the social mobility patterns typical of each country. The complexity of the 21st century labour market makes the use of complementary approaches essential both in theoretical and methodological terms.

Likewise, the model of human capital based on a neoclassical economic model proves limited as it usually tries to assess the value of higher education by calculating the rate of returns and wage premia. Beyond wage differences, employment quality – measured using objective and subjective elements – is certainly fundamental to judging the true value of the labour trajectories offered by each degree programme and type of higher education institution. Return rates do not capture all of the relevant and necessary information that young people entering higher education need in their decision-making processes. Moreover, those rates do not always reflect what is truly important in a job nor that which has a major impact on the quality of life of future professionals. Thus, public institutions that guide the higher education system and the educational institutions themselves must be encouraged to measure, monitor and assess the type and quality of the labour trajectories of the

graduates from each degree programme and institution in order to shape the institutional framework of higher education systems, making them more inclusive and equitable.

Conclusions and final remarks

I have started this dissertation by highlighting the relevance of freedom as a fundamental component of what should be understood by development. However, I have highlighted that freedom can only be fully achieved under conditions of equality, which in turn should be sustained by social, economic and political institutions based on principles of justice. Unfortunately, I observe in reality that these principles are seldom truly understood, genuinely promoted nor effectively met.

In the context of pervasive high and persistent levels of inequality and limited social mobility around the globe, this dissertation attempts to shed light on the institutional underlying factors that shape unequal social dynamics in a structural and structured manner. In pursuing this goal, I adopt an institutional analysis perspective examining the rules, both formal and informal, that could explain the existing disparities and unequal social equilibria. In doing so, I attempt to recover economic analysis from a simplistic neoclassical approach that conceptualises human interactions as occurring in the void, in an impersonal free market society driven by natural forces beyond our control. Instead, I make an effort to recover the political and institutional dimensions, acknowledging the fact that markets and social dynamics are structured and embedded in human created institutions. Also, I observe that these institutions become structural as they solidify and consolidate through culture and stablished worldviews that become difficult to change and that explain the observed path dependencies[70]. The resulting paths are not fortuitous but result from power struggle, frequently led by elite groups that deploy different strategies to shape institutions in order to consolidate their advantage over the rest of the population. In this dissertation, these dynamics have been described and discussed using the tax and the education system as examples.

Using these analytical lenses, this investigation has chosen to concentrate its inquiry on the education system due to its capacity of either transforming, reducing or perpetuating inequalities. It is a sphere of society where the past civilisation –with its paradigms, resources, culture and power relations- meets and engenders the future society –embodied in the children and youth- constrained or enabled by the configuration of the present education system. Indeed, education

[70] This has indeed been the case of colonial institutions and social norms which have become ingrained in society, as discussed in paper 1.

plays a key role socialising the new generations and also selecting those who will lead society in its different economic, social, cultural and political spheres. Through this means, and depending on its structure, dynamics, actors, contents and practices, the education system will either perpetuate or transform the mind-sets of those who in the future will preserve or contest and eventually change unjust formal and informal rules prevailing in a nation. This idea is probably what inspired the constitution of the UNESCO signed in 1945 in the context of the ending WWII:

That since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed; That ignorance of each other's ways and lives has been a common cause, throughout the history of mankind, of that suspicion and mistrust between the peoples of the world through which their differences have all too often broken into war;

That the great and terrible war which has now ended was a war made possible by the denial of the democratic principles of the dignity, equality and mutual respect of men, and by that propagation, in their place, through ignorance and prejudice, of the doctrine of the inequality of men and races; That the wide diffusion of culture, and the education of humanity for justice and liberty and peace are indispensable to the dignity of man and constitute a sacred duty which all the nations must fulfil in a spirit of mutual assistance and concern (UNESCO, 1946).

Of course, education is not a `silver bullet´ for all development problems, but it is certainly a necessary condition for sustainable development based on freedom and equality. In fact, it is sometimes difficult to sustain institutional changes – be it a tax reform, industrial policy and/or social norm- if they are not finally built and legitimised in the minds of citizens, intellectuals, social movements, media, and political parties, among other.

In order to study the role of the education system as an institution, examining its effect on the reproduction of inequality and social mobility, this dissertation has chosen Chile as a case study. This country constitutes a valuable experience from which to draw lessons from, since it is a very unequal society by any international standard, and this inequality seems to be fuelled by, among other factors, the very particular institutional design of the educational system. It is based on vouchers that were implemented in order to promote an education market. This is a unique case worldwide due to its scope and long-standing operation, thus an interesting place to examine the relationship between education and inequality.

In particular, this dissertation has contributed with four papers, addressing different aspects and perspectives to better understand the role of education institutions of inequality and social mobility.

The first essay presented the theoretical framework and conceptual bases to analyse the political economy of inequality in Chile from an historical perspective, arguing for a holistic institutional approach to unravel persistent structural inequalities. This paper argues that although classical and neoclassical economists have tried to justify inequality as being necessary for capital accumulation and growth, recent evidence show that inequality hampers economic development. Moreover, contrary to most dominant theories, inequality is not inevitable (fixed in time and space), nor does it follow a predictable path determined by the country's stage of development. Although technological change and globalisation constitute important challenges, comparative evidence shows that it is how countries (and the institutions they put in place) react to globalisation and technological change that determines their final impact in the distribution of income. As a result, I argue that it is how institutions are shaped and who they serve that really matter. Market forces are of course relevant, but they should work embedded within institutional frameworks that limit their possible outcomes.

This paper concludes that investigating Chile's underlying institutions is key to understanding the profound roots of inequality, with both historical and current institutions playing an important role. Nevertheless, although historical institutions are important for providing a better understanding of the role of path dependencies, it is current institutions that must be scrutinised and reformed in order to ensure desired levels of equality and social justice. This has not proven to be an easy task, especially because institutions are usually the product of social struggles that reflect and reproduce asymmetries of power in society. It is in fact the consistent facilitation of an extreme concentration of economic and political power among the Chilean elite that allows this group not only to accrue a highly uneven portion of society's fruits, but also to 'convince' by coercion and/or persuasion that the unfair final distribution of outcomes is actually just and beneficial to all.

The second essay examined the political economy of the Chilean school system and its role in the reproduction of inequality. Moreover, in the context of the increasing role of private education around the world, this paper is an important contribution, since Chile constitutes one of the oldest and most extensive voucher systems in the world, and thus represents a valuable experience from

which numerous general lessons may be drawn. It theoretically and empirically examines the effects of neoliberal policy reforms on education quality and equity. For this purpose, this paper studies a key pillar of education markets, i.e. the role of competition between schools as a driver for education quality improvement. From a theoretical point of view, this paper advances the understanding of education markets as formal institutions which have an important effect on the overall learning outcomes and also their distribution among different segments of society. Empirically, it articulates and analyses several administrative datasets to econometrically estimate the effect of competition among schools on learning outcomes of students, measured through national standardised test scores. The paper provides new evidence showing that the effects of competition on academic outcomes have been rather negative, although negligible in size.

This conclusion has several policy implications. Firstly, the Chilean education system should no longer rely on market forces in general, or competition in particular, for academic improvement. The government should put in place accountability measures and support systems to monitor and encourage quality improvements in schools. Secondly, it should limit selection practices that allow cream-skimming and/or discrimination against students[71]. In doing so, it will promote a greater diversity of students within school communities, enhancing learning and school life. Improving quality through sorting should cease to be an option. Thirdly, it should gradually eliminate cost sharing schemes, which promote an economic stratification and social reproduction of inequalities. Fourthly, since in some cases competition seems to be harmful, the state should explore ways of promoting cooperation between schools. In fact, instead of competition, it is rather cooperation networks among schools that seem to be a crucial factor behind quality improvement.

It is in fact generally assumed that the *creative destruction* of schools in a competitive market will enhance quality of education for all students in a community. Yet this assumption ignores the fact that, when low-performing schools start losing part of their enrolment, they experience a slow reduction of their financial resources that could induce a process of slow deterioration. Meanwhile, the students in those schools receive an education of decreasing quality, and are negatively affected

[71] During the writing of this thesis this situation has positively changed with the enactment in 2015 of the Education Inclusion Law, which bans student selection, gradually eliminates subsidised schools` cost sharing schemes, and for-profit institutions. However, the actual implementation of the law is still to be seen, as in 2019 the current government has sent a bill to revert this policy.

for life. The period of time between the initial decline of a school and its actual shutting down could be too long to tolerate from a normative perspective.

The third paper emphasised the relevance of informal institutions and their role in shaping individuals´ preferences. It provides empirical evidence on the effect of social classes on the perceptions of reality, demonstrating that inequality affects the chances of poorer youth to successfully make the transition to higher education. This paper explores mechanisms by which inequality detrimentally affects education attainment and thus social mobility, estimating and examining *ex-ante* perceived rates of return to higher education among students from different socio-economic status (SES) in Chile.

From a theoretical perspective, this paper argues that human capital decisions are driven not only by economic returns, but also by non-economic factors, such as one's social identity (Akerlof and Kranton, 2010). Social contexts and preference formation greatly matter and must be taken into account.

From a methodological point of view, it argues that even when focusing exclusively on economic rate of returns, it is important to examine subjective or perceived returns and not 'actual' ones, as only the former should be expected to affect real life choices. Although this is self-evident, most studies on this area focus in the latter.

Finally, from an empirical perspective, the analysis of the resulting data provides new evidence showing that, at the aggregate level, students' estimated *perceived* rate of return corresponds accurately with the *actual* national mean (based on actual labour market data), as predicted by the Human Capital Theory (HCT). However, when data is analysed at the individual level, large deviations from the mean are detected. Specifically, I find that low SES students report much lower perceived returns than their high SES peers, questioning the validity of the HCT, as a pertinent policy framework in highly unequal societies.

These results have important policy implications for Chile and other countries in the world, which should be taken into consideration in order to design adequate funding schemes. In fact, if

perceived rates of return are driving higher education participation decisions (even if only in part), our results show that there should be no surprise if poorer students decide to stay out of higher education. This pattern should be expected to increase in the presence of high tuition fees and cost-sharing schemes, such as the ones observed in Chile. Moreover, lower perceived rates of return among poorer students, ceteris paribus, should affect their willingness to take loans to finance their education.

Consequently, further research is needed to understand the underlying mechanisms affecting students' perceptions and participation decisions. Meanwhile, governments must be aware of the great risks behind universal indiscriminate loan systems that do not seriously take into account the importance of socio-economic contexts. Failing to do so will only help reproduce inequality and deny poorer students their chances of social mobility.

The fourth and last paper analysed the joint effect of social class disparities and institutional horizontal differentiation of the tertiary education system on intergenerational social mobility and labour market trajectories of graduates. For this purpose, it develops and applies a unique questionnaire and face-to-face survey to more than 1,300 graduates after a decade of their labour market insertion. The statistical and econometric analysis shows the existence of divergent labour market trajectories among professionals, which despite having graduated from the same university and program study, have increasingly different wages, job qualities, and hierarchical positions within the organization where they work, depending on the social background. In other words, the great equalising promise of higher education is only partly fulfilled in the Chilean case.

These results should raise serious concerns around the institutional framework of the Chilean higher education system, which due to its free market logic allows the existence of extreme quality gaps between institutions, as it has shown through the data. Theses differences persist even when SES, innate skills and ability proxies are included in the regressions.

It also raises concerns about the social norms in the labour market, which seem to reward being from an upper class of origin, despite having equivalent level of education. This clearly requires a cultural and regulatory change in the selection and promotion practices in the labour market.

From a theoretical-methodological standpoint, this study also concludes with a necessary critique to a long tradition of sociology research that attempts to understand the phenomenon of social mobility based on intergenerational movement between social classes of origin and destination. Despite its strengths, that focus has important limitations. Using occupational categories that are too broad, does not detect differences and nuances within the same social class or occupation. These nuances have a significant impact on wages, employment quality, autonomy, satisfaction, status and on individuals´ hierarchical position within the organisation where they work. Thus, using a class focus to judge the degree of social mobility attained by an individual is surely incomplete and insufficient as it does not result in thorough understanding of the processes involved or the social mobility patterns typical of each country.

Likewise, I conclude that the model of human capital based on a neoclassical economic model proves limited as it usually tries to assess the value of higher education by calculating the rate of returns and wage premia. Beyond wage differences, employment quality – measured using objective and subjective elements – is certainly fundamental to judging the true value of the labour trajectories offered by each degree programme and type of higher education institution. Return rates do not capture all of the relevant and necessary information that young people entering higher education need in their decision-making processes. Moreover, those rates do not always reflect what is truly important in a job nor that which has a major impact on the quality of life of future professionals.

In sum, the four papers included in this dissertation have shown the importance of understanding the political economy and underlying institutional framework of society to truly understand the causes and roots of inequality and the lack of social mobility. Power asymmetries tend to express themselves in a very concrete manner in the shape of key institutions, such as the tax and education system. This complex phenomenon which seems abstract in nature, is actually very concrete in terms of its effects on people´s lives. These institutions strongly determine the distribution of income, including the concentration of economic power accrued at the top 1% (as seen in paper 1); the learning opportunities of different segments of society (paper 2); the personal preferences and degrees of risk aversion of poorer students, which affect their possibility of successfully

transitioning to tertiary education (paper 3); and the level of wages, job quality, occupational status, position within an organization, and quality of life of workers (paper 4).

However, the vicious cycle of inequality reproduction can and should be addresses. Society does not have to work this way. Poorer children should not have their destiny determined by the family or location they were born. We have the moral obligation to better understand this reality in order to change it. Equality is a political choice. After all, as Rawls (1971: 102) constantly reminds us:

> *The natural distribution is neither just nor unjust; nor is it unjust that persons are born into society at some particular positions. These are simply natural facts. What is just and unjust is the way that institutions deal with these facts.*

It is up to our generation to work towards a more egalitarian future. If not for ourselves, at least for our children and the generations to come.

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Appendixes

Appendix 1.

Competition as Turnover: Estimation of Turnover using I.V.

Source	SS	df	MS
Model	48169.2909	14	3440.66364
Residual	109857.133236660	236660	.464198145
Total	158026.424236674	236674	.667696595

Number of obs = 236675
F(14,236660) = 7412.06
Prob > F = 0.0000
R-squared = 0.3048
Adj R-squared = 0.3048
Root MSE = .68132

lnturnover	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
alumnos	9.02e-07	7.80e-08	11.56	0.000	7.49e-07	1.06e-06
urbanidad	.3641394	.0099966	36.43	0.000	.3445464	.3837324
region						
2	-1.240517	.0111889	-110.87	0.000	-1.262447	-1.218587
3	-1.136857	.0136533	-83.27	0.000	-1.163617	-1.110097
4	-.6690648	.0108736	-61.53	0.000	-.6903768	-.6477528
5	-.5547014	.0096436	-57.52	0.000	-.5736026	-.5358001
6	-.5106902	.0106993	-47.73	0.000	-.5316606	-.4897199
7	-.8721054	.0103207	-84.50	0.000	-.8923338	-.8518771
8	-.8432835	.00936	-90.09	0.000	-.8616289	-.8249382
9	-.7510864	.0098781	-76.04	0.000	-.7704472	-.7317256
10	-.4876579	.0100744	-48.41	0.000	-.5074036	-.4679123
11	.2863766	.0213381	13.42	0.000	.2445544	.3281988
12	-.8793052	.017064	-51.53	0.000	-.9127502	-.8458601
13	.0563797	.0086826	6.49	0.000	.0393619	.0733974
_cons	-3.158604	.0116673	-270.72	0.000	-3.181471	-3.135736

Appendix 2. 2SLS Regression for PS schools, Maths

Instrumental variables (2SLS) regression

Number of obs	65510
Wald chi2(7)	9801.33
Prob > chi2	0.0000
R-squared	0.1250
Root MSE	49.311

mat	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
turn_tot	-23.94373	9.019125	-2.65	0.008	-41.62089	-6.266565
lingreso	11.19029	.2826641	39.59	0.000	10.63628	11.7443
lpisced	14.4358	.7140615	20.22	0.000	13.03626	15.83533
lmisced	21.39724	.7537591	28.39	0.000	19.9199	22.87458
hombre	3.963921	.386098	10.27	0.000	3.207183	4.720659
urbano	3.656312	.7149884	5.11	0.000	2.25496	5.057663
lambda_ps	4.060207	1.403579	2.89	0.004	1.309241	6.811172
_cons	21.95589	4.300847	5.11	0.000	13.52638	30.38539

Appendix 3. 2SLS Regression for MUN schools, Maths

Instrumental variables (2SLS) regression

Number of obs	67758
Wald chi2(7)	4037.79
Prob > chi2	0.0000
R-squared	0.0553
Root MSE	50.266

mat	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
turn_tot	-6.414692	14.07439	-0.46	0.649	-33.99998	21.1706
lingreso	7.558917	.397977	18.99	0.000	6.778897	8.338938
lpisced	11.20129	.5591304	20.03	0.000	10.10542	12.29717
lmisced	17.95656	.5856437	30.66	0.000	16.80872	19.1044
hombre	3.0144	.3863095	7.80	0.000	2.257248	3.771553
urbano	-3.400509	.463874	-7.33	0.000	-4.309685	-2.491333
lambda_mun	-10.10597	1.308625	-7.72	0.000	-12.67083	-7.541112
_cons	87.34875	5.094992	17.14	0.000	77.36274	97.33475

Appendix 4. 2SLS Regression for PS schools, Language

Instrumental variables (2SLS) regression

Number of obs	65285
Wald chi2(7)	7228.88
Prob > chi2	0.0000
R-squared	0.0963
Root MSE	49.21

leng	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
turn_tot	-31.4578	9.076226	-3.47	0.001	-49.24688	-13.66872
lingreso	8.732346	.2809056	31.09	0.000	8.181781	9.282911
lpisced	12.33908	.7141805	17.28	0.000	10.93931	13.73885
lmisced	18.1221	.7563494	23.96	0.000	16.63969	19.60452
hombre	-12.736	.3861664	-32.98	0.000	-13.49287	-11.97912
urbano	.2610344	.7135641	0.37	0.715	-1.137525	1.659594
lambda_ps	5.199676	1.411197	3.68	0.000	2.433782	7.965571
_cons	89.45757	4.291969	20.84	0.000	81.04547	97.86968

Appendix 2.

Linear regression models for variables of the first job: search time and first job salary.

VARIABLES	Time it takes to find a first job	Ln(Hourly wage, first job)		
Female	0.1000506	-0.015093	-.0047941	.0047755
	(-0.1479254)	(0.0301565)	(.0289963)	(.0296366)
PSU	.0001116	.0003454	.0002111	.0002941
	(.0011317)	(.0002366)	(.0002251)	(.0002307)
Labour experience	.082339	0.0063915	.0149917	.009729
	(.0613051)	(0.0125816)	(.0123223)	(.0125321)
Labour experience^2	-.0031747 *	-.0002675	-.0005324	-.0004074
	(.0018529)	(.0003871)	(.0003838)	(.0003879)
Social Capital Stock (weighted by prestige)	-.0114227 ***	.0010496	.0009907	.0014119 *
	(.0040618)	(.0007764)	(.0007708)	(.0007787)
Social origin: Social class father (EGP) - ref. Class I y II				
III y IV		-.1059251***		
		(.030572)		
V, VI y VII		-.04956		
		(.0408066)		
Social origin: SES - ref. High SES				
Medium			-.0548909 *	
			(.0312514)	
Low			-.0462861 *	
			(.0347516)	

Social origin: Mother Education - ref. With higher education				
Without higher education	.0028756			-.0878739 ***
	(.1531742)			(.0297805)
Programme of study: ref. Pedagogy				
Law	.4472309 *	.3745479***	.3860964 ***	.4042287 ***
	(.2337356)	(.0473449)	(.0455004)	(.0470048)
Business	.0335015	.5851212***	.6008494 ***	.6267676 ***
	(.2177946)	(.0462009)	(.0443341)	(.0455601)
Psychology	.4566683 **	.2061742***	.2085573 ***	.2362099 ***
	(.2207316)	(.0450969)	(.0432048)	(.0448581)
Institutional Selectivity: ref. low selectivity				
Medium	.1251908	-.0515997	-.0604763	-.0573537
	(.2659085)	(.0546981)	(.0522105)	(.0536903)
High	-.0371948	.111486**	.114169 **	.1264226 ***
	(.2466682)	.0481022	(.0466459)	(.0479709)
Public University	.0297831	-.1892399***	-.1791382 ***	-.1789602***
	(.1800763)	(.0365617)	(.0342712)	(.035056)
Constant	1.996563***	7.679972***	7.685623 ***	7.622265***
	(.7639437)	(.1634419)	(.1556054)	(.1570307)
N	987	1,088	1,222	1,169
R^2	2%	21%	20,1%	20,2%
Note: standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1.				

Source: Author´s own elaboration.

Linear regression models: growth rates of wages.

VARIABLES	Growth rates of wages	
Female	-.1692936**	-.1670491 **
	(.0786803)	.0769307
PSU	.0003832	-.0001
	(.0006053)	(.0005975)
Labour experience	-.0385982	-.0289462
	(.0331398)	(.0325461)
Labour experience^2	.0012598	.0007357
	(.0010159)	(.0009986)
Social Capital Stock (weighted by prestige)	.0072945 ***	.0070088 ***
	(.0021197)	(.0020803)
Social origin: Mother Education - ref. Without higher education		
With higher education	.2527942 ***	.0260347
	(.0800658)	(.0841022)
Programme of study: ref. Pedagogy		
Law	.3744491 ***	.3129713 ***
	(.123387)	(.1210437)
Business	.3165109 ***	.3153878 ***
	(.1198824)	(.1168342)
Psychology	.2149805 *	.1110596

	(.1171108)	(.1156739)
Institutional Selectivity: ref. low selectivity		
Medium	.2441153 *	.1406376
	(.1433508)	(.1406282)
High	.1547194	.1681664
	(.1266153)	(.1238962)
Public University	.8907685 ***	.6995985 ***
	(.094623)	.0959146
Number of employers		
Two employers		.5497576 ***
		(.1064342)
Three employers		.6558195 ***
		(.104485)
Four employers or more		.6778226 ***
		(.1106027)
Constant	.1627194	.269655
	(.4113583)	(.4046423)
N	1,079	1,073
R^2	19,4%	23,8%
Note: standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1.		

Source: Author´s own elaboration

Linear regression models: Job satisfaction, current employment.

VARIABLES	Job satisfaction index (values 0 - 100)		
Female	-0.7948431	-.9076455	-.8119126
	(0.9847386)	(.9416126)	(.93509)
PSU	.0030139	-.0020111	-.0022814
	(.0076822)	(.0073805)	(.0073274)
Labour experience	.6886903 *	.6810509 *	.3678244
	(.4141068)	(.395958)	(.4002126)
Labour experience^2	-.0230822 *	-.0254572 **	-.0169483
	(.0128528)	(.0122748)	(.0123559)
Social Capital Stock (weighted by prestige)	.0580646 **	.0628735 ***	.0727764 ***
	(.0265294)	(.0255315)	(.025458)
Social origin: Mother Education - ref. Without higher education			
With higher education	8.572824 ***	5.629816 ***	5.563279 ***
	(.9963257)	(1.040267)	(1.032872)
Programme of study: ref. Pedagogy			
Law	1.192864	.3523108	.1947705
	(1.580878)	(1.513092)	(1.502632)
Business	1.650586	1.123821	.9134531
	(1.502019)	(1.436871)	(1.42738)
Psychology	-.4010433	-.637155	.1683604
	(1.508277)	(1.448267)	(1.450726))
Institutional Selectivity: ref. low selectivity			

Medium	3.295778 *	1.648836	.6199287
	(1.761481)	(1.707801)	(1.71333)
High	3.191982 **	3.000555 **	1.670325
	(1.587197)	(1.519187)	(1.541593)
Public University			4.786864 ***
			(1.148245)
Number of employers			
Two employers		8.794611 ***	7.769423 ***
		(1.29131)	(1.305351)
Three employers		8.34132 ***	7.224981 ***
		(1.282227)	(1.300822)
Four employers or more		7.230211 ***	5.766967 ***
		(1.312405)	(1.34937)
Full time: Ref. part-time		1.405068	1.130405
		(1.153224)	(1.146784)
Constant	51.60163 ***	51.45434 ***	53.99606 ***
	(5.191862)	(5.08395)	(5.083902)
N	1,174	1,137	1,137
R^2	11,8%	18,9%	20,1%
Note: standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1.			

Source: Author´s own elaboration

Logistic regression models: Directive and managerial positions.

VARIABLES	Logit (odds ratio): Probability of occupying a directive and/or managerial position	
Female	-.7692494 ***	-.769519 ***
	(.2035068)	(.2035075)
PSU	-.001739	-.0017413
	(.0018322)	(.0018322)
Labour experience	.2203198 **	.2184989 **
	(.1072233)	(.1076164)
Labour experience^2	-.0052574	-.0052037
	(.0039069)	(.0039021)
Social Capital profile: ref. Low profile	.0441796	.0472141
	.2521593	(.2585197)
Social origin: Mother Education - ref. Without higher education		
With higher education	.7391787 ***	.7371484 ***
	(.1971028)	(.2019715)
Programme of study: ref. Pedagogy		
Law	.0100488	.010036
	(.4138832)	(.4141178)
Business	.2120475	.2097271
	(.3590434)	(.358907)
Psychology	-.2363256	-.2327707
	(.3934258)	(.3971776)
Institutional Selectivity: ref. low selectivity		

Medium	**.924157 ****	**.9208709 ****
	(.4017597)	**(.4038171)**
High	**1.266819 *****	**1.259798 *****
	(.4274133)	(.4372793)
Public University		**.0167597**
		(.2305848)
Constant	**-3.113933 ****	**-3.100626 ****
	(1.288794)	(1.284835)
N	**1,034**	**1,034**
Pseudo R^2	**8,5%**	**8,5%**
Note: standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1.		

Source: Author´s own elaboration

Linear regression models for current job wage (ln).

VARIABLES	Ln(Hourly wage, current job)		
Female	-.0655311 **	-.0517196 *	-.0545283 *
	(.0294762)	(.0282954)	(.0287945)
PSU	.0004746 **	.0003499	.0003229
	(.0002319)	(.0002209)	(.0002245)
Labour experience	-.0196167	-.0174458	-.0133137
	(.0123713)	(.0121321)	(.0122573)
Labour experience^2	.0004782	.0004501	.000384
	(.0003811)	(.0003779)	(.0003797)
Social Capital Stock (weighted by prestige)	.0043929 ***	.0045438 ***	.0037962***
	(.0007833)	(.0007818)	(.0007801)
Social origin: Social class father (EGP) - ref. Class I y II			
III y IV	-.0145089		
	(.0298664)		
V, VI y VII	.0088157		
	(.040366)		
Social origin: SES - ref. High SES			
Medium		.0052774	
		(.0304014)	
Low		-.0013718	
		(.0341872)	

Social origin: Mother Education - ref. Without higher education			
With higher education			.1454524 ***
			(.0290287)
Programme of study: ref. Pedagogy			
Law	.5934497 ***	.6047095 ***	.5815845 ***
	(.0465815)	(.0447132)	(.0458629)
Business	.8632868 ***	.8719595 ***	.842165 ***
	(.0452305)	(.0435538)	(.0442197)
Psychology	.3887831 ***	.3979743 ***	.3476891 ***
	(.0442708)	(.0423846)	(.0438413)
Institutional Selectivity: ref. low selectivity			
Medium	.1255365 **	.1356599 ***	.1240781 **
	(.0547071)	(.0522721)	(.0532423)
High	.2735201 ***	.2755782 ***	.2547694 ***
	(.047752)	(.0461532)	(.0470879(
Public University	.2501837 ***	.26349 ***	.2376602 ***
	(.0359479)	(.0335768)	(.0342066)
Constant	7.818751 ***	7.850214 ***	7.853372 ***
	(.1604536)	(.1528863)	(.1534137)
N	1,072	1,202	1,153

R^2	49,5%	48,7%	49%
Nota: standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1.			

Source: Author´s own elaboration